DPS24

DIGITAL PERSONAL STUDIO

AKAI professional

Operator's Manual

WARNING
To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

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WARNING!!

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

1-En

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

THE SYMBOLS ARE RULED BY UL STANDARDS (U.S.A.)

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intented to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

5B-En

Lithium battery
This product uses a lithium battery for memory backup.
The lithium battery should only be replaced by qualified service personnel.
Improper handling may cause risk of explosion.

24A-En

WARNING: WHEN USING ELECTRIC PRODUCTS, BASIC PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING:

WARNING

The DPS24 is designed to be used in a standard household environment.

Power requirements for electrical equipment vary from area to area. Please ensure that your DPS24 meets the power requirements in your area. If in doubt, consult a qualified electrician or AKAI professional dealer.

120 VAC	@ 60 Hz for USA and Canada
230 VAC	@ 50 Hz for Europe
240 VAC	@ 50 Hz for Australia

PROTECTING YOURSELF AND THE DPS24

- Never touch the AC plug with wet hands.
- Always disconnect the DPS24 from the power supply by pulling on the plug, not the cord.
- Allow only an AKAI professional dealer or qualified professional engineer to repair or reassemble the DPS24. Apart from voiding the warranty, unauthorized engineers might touch live internal parts and receive a serious electrical shock. There are no user serviceable parts inside.
- Do not put, or allow anyone to put any object, especially metal objects, into the DPS24.
- Use only a household AC power supply. Never use a DC power supply.
- If water or any other liquid is spilled into or onto the DPS24, disconnect the power, and call your dealer.
- Make sure that the unit is well-ventilated, and away from direct sunlight.
- To avoid damage to internal circuitry, as well as the external finish, keep the DPS24 away from sources of direct heat (stoves, radiators, etc.).
- Avoid using aerosol insecticides, etc. near the DPS24. They may damage the surface, and may ignite.
- Do not use denatured alcohol, thinner or similar chemicals to clean the DPS24. They will damage the finish.
- Modification of this equipment is dangerous, and can result in the functions of the DPS24 being impaired. Never attempt to modify the equipment in any way.
- Make sure that the DPS24 is always well-supported when in use (either in a specially-designed equipment rack, or on a firm level surface).
- In order to assure optimum performance of your DPS24, select the setup location carefully, and make sure the equipment is used properly. Avoid setting up the DPS24 in the following locations:

  1. In a humid or dusty environment
  2. In a room with poor ventilation
  3. On a surface which is not horizontal
  4. Inside a vehicle such as a car, where it will be subject to vibration
  5. In an extremely hot or cold environment

For U.K. customers only

WARNING

THIS APPARATUS MUST BE EARTHED

IMPORTANT

This equipment is fitted with an approved non-rewireable UK mains plug.

To change the fuse in this type of plug proceed as follows:

1) Remove the fuse cover and old fuse.

2) Fit a new fuse which should be a BS1362 5 Amp A.S.T.A or BSI approved type.

3) Refit the fuse cover.

If the AC mains plug fitted to the lead supplied with this equipment is not suitable for your type of AC outlet sockets, it should be changed to an AC mains lead, complete with moulded plug, to the appropriate type. If this is not possible, the plug should be cut off and a correct one fitted to suit the AC outlet. This should be fused at 5 Amps.

If a plug without a fuse is used, the fuse at the distribution board should NOT BE GREATER than 5 Amp.

PLEASE NOTE: THE SEVERED PLUG MUST BE DESTROYED TO AVOID A POSSIBLE SHOCK HAZARD SHOULD IT BE INSERTED INTO A 13 AMP SOCKET ELSEWHERE.

The wires in this mains lead are coloured in accordance with the following code:

GREEN and **YELLOW**	— Earth
BLUE	— Neutral
BROWN	— Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, please proceed as follows:

The wire which is coloured GREEN and YELLOW must be connected to the terminal which is marked with the letter E or with the safety earth symbol ⏚ or coloured GREEN or coloured GREEN and YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

THIS APPARATUS MUST BE EARTHED

Ensure that all the terminals are securely tightened and no loose strands of wire exist.

Before replacing the plug cover, make certain the cord grip is clamped over the outer sheath of the lead and not simply over the wires.

6D-En

FCC WARNING

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

21B-En

AVIS POUR LES ACHETEURS CANADIENS DU DPS24

Le présent appareil numérique n'ément pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Class B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

27-F

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

27-En

VENTILATION

Do not prevent the unit's ventilation, especially by placing the unit on soft carpet, in a narrow space, or by placing objects on the unit's chassis—top, side, or rear panels. Always keep the unit's chassis at least 10 centimeters from any other objects.

31C-En

CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE MANUFACTURER FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

32-En

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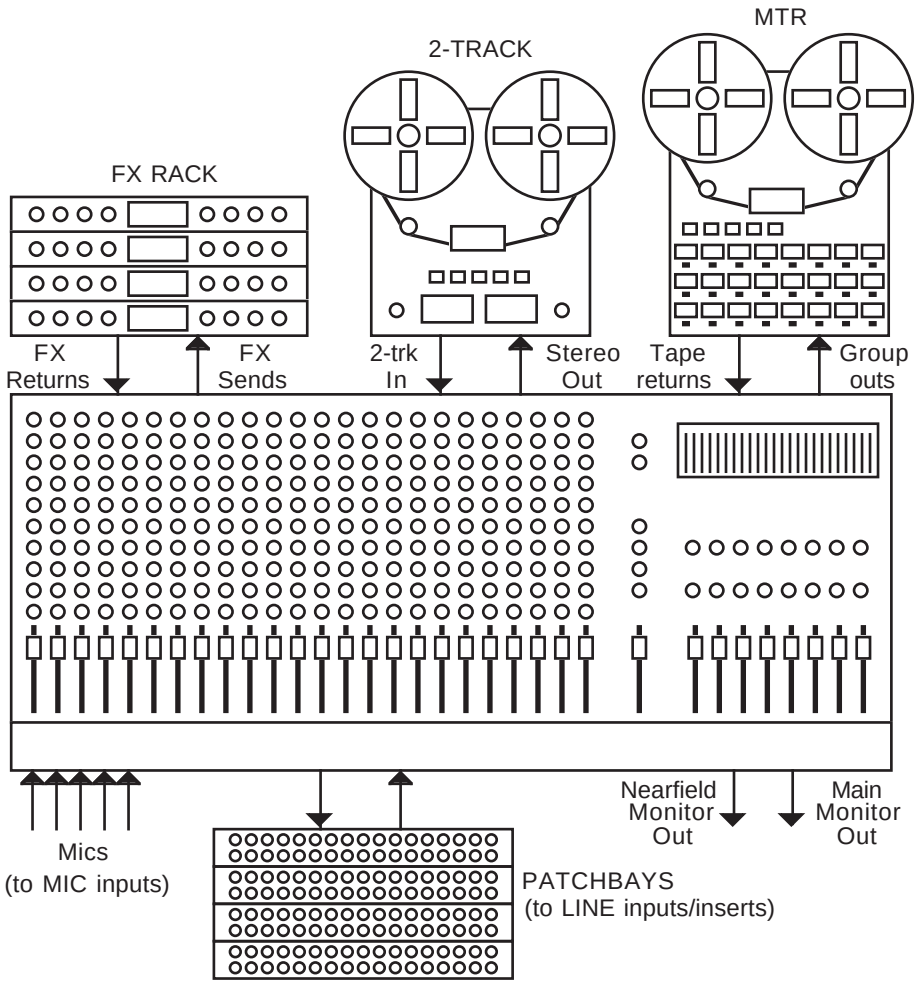
FEATURES

Thank you for purchasing the DPS24 24-track personal studio. The DPS24 is packed full of highly professional features that allow you to make digital multi-track recordings and mixdowns in one convenient unit. These include:

- 24-track hard disk recorder/editor offers non-compressed 16/24-bit linear operation at 32/44.1/48/96kHz sampling rates with non-destructive multi-track real-time editing (cut, copy, paste, insert, move, etc.).
- 46-channel digital mixer with 8 groups, phantom power (inputs 1-4), multi-channel digital I/O, stereo digital I/O, talkback, 2-track input, stereo AUX input and internal digital patchbay.
- 100mm long throw touch sensitive, motorised faders.
- Inputs and disk tracks have 3-band semi-parametric EQ and dynamics processing (compressor, gate) per channel.
- Inputs and disk tracks have 4 pre/post sends switchable to Internal effects or AUX sends per channel.
- Over 50 real-time effects (x 4 channels) which include delay, chorus, flanger, phase shifter, reverb, pitch shifter, auto-pan, auto/touch-wah, rotary speaker simulation, distortion, EQ, noise gate, compressor/limiter, enhancer and real-time pitch corrector.
- 24 x balanced analogue inputs (12 x 2 banks) reduces the need for re-patching.
- Balanced send/return inserts on Inputs 1-4.
- Q-STRIP gives quick and convenient access to pan and effects/aux sends.
- Q-CHANNEL puts an entire channel of controls (pan, EQ, sends) at your fingertips and the collar of LEDs around the control show each control's position.
- Q-LINK controls alongside the LCD gives quick and easy access to on-screen parameters.
- MAIN and NEARFIELD monitor outputs with dedicated console switch.
- Dedicated MONO switch allows mono reference monitoring.
- STUDIO outputs feed headphone monitoring in a separate recording area.
- Dedicated JOG/SHUTTLE wheel for multi-track scrubbing.
- Off-line DSP functions include stereo, phase coherent timestretch, pitch shift, BPM matching, varispeed and reverse.
- Multiple levels of UNDO/REDO
- Up to 256 'virtual tracks'
- 320 x 240 greyscale LCD offers an intuitive and easy-to-use operating environment.
- Autolocator with 100 locate points per project.
- External sync to SMPTE (optional) and MIDI timecode.
- CD-RW option allows back-up and mastering.

DPS24 STRUCTURE

Internally, the DPS24 is laid out much like any conventional recording studio:



At the heart of this 'typical' studio is a large, multi-channel mixer. The mixer's GROUP outputs are connected to the inputs of the MTR (multi-track recorder) and inputs are routed to tracks on the MTR via these. The outputs of the MTR are fed back into the mixer where the tracks can be mixed, EQ'd, etc. Microphones are connected to balanced mic inputs on the mixer and line inputs are patched to the line inputs. The effects sends are connected to the effects processors and the outputs of these are connected to the mixer's effects return channels. The mixer's stereo L/R outputs are connected to a stereo mastering machine and its outputs are returned to the console's 2-TRACK inputs and monitored using the 2-TRACK switch on the console.

Monitor outputs feed an amplification system and, as is common in high-end studios, there are two monitor outputs - one feeds the control room's main monitoring system whilst another feeds a smaller monitoring system (maybe a domestic hi-fi) for checking a mix on smaller speakers. Also in this typical studio (but not shown here) would be compressors, noise gates and so forth.

If you are familiar with this setup, then you already understand most of the DPS24 as this is pretty much what the DPS24 offers!

However, instead of separate analogue units, all the above is done digitally within the DPS24 so that you enjoy the benefits of superior sound quality, automated mixing, non-destructive editing and much more besides in one convenient unit.

GETTING AROUND THE DPS24

GETTING AROUND THE DPS24

This section deals with the DPS24's control surface. Although we would like to think that most of it should be fairly self-explanatory, please read this section to gain a full understanding of the DPS24's functions.

The panel is laid out logically with many dedicated keys that provide direct access to the most commonly used functions employed when recording, track laying, overdubbing and mixing and the DPS24's control surface is designed in such a way that for every day use, it should not be necessary to access obscure, LCD-driven menus - with its 'knobby' front panel, operation is designed to be as 'hands-on' and 'traditional' as possible. For example....

For track laying, route the inputs to the appropriate track(s) using the Group function as on a traditional mixer, select the track(s) for record and press PLAY and RECORD together. Drop out of record by pressing PLAY again. To overdub, rewind, re-group, select different tracks for record and repeat the process, monitoring previously recorded material via the DISK TRACKS fader bank.

Want to pan your tracks? Simply use the row of encoders above the faders. Want to add effects? Select the appropriate FX send in the Q-STRIP FUNCTION panel and adjust the encoders to set FX send levels as necessary.

Need to tweak EQ? Select the appropriate channel(s) using the channel SELECT keys, press Q-CHANNEL and adjust the EQ using the Q-CHANNEL encoders.

Need to tweak an effect? Press FX and use the Q-LINK controls to modify parameters (and with the Q-CHANNEL selected, you can adjust the channel parameters AND the effects parameters simultaneously).

If you are working with artists in separate rooms, set up a 'foldback' mix using pre-fade AUX 3 and/or 4 and the STUDIO outputs - even speak to them via the DPS24's internal talkback mic during the track laying process.

Having laid down some tracks, you hear something that needs deleting! Simply hit EDIT, select the appropriate track(s), mark the offending region with the IN/OUT keys and press CUT or ERASE. Similarly, you want to use that one great guitar riff elsewhere in the project - select the appropriate track(s), press EDIT, mark the region, copy it and paste it wherever it's needed.

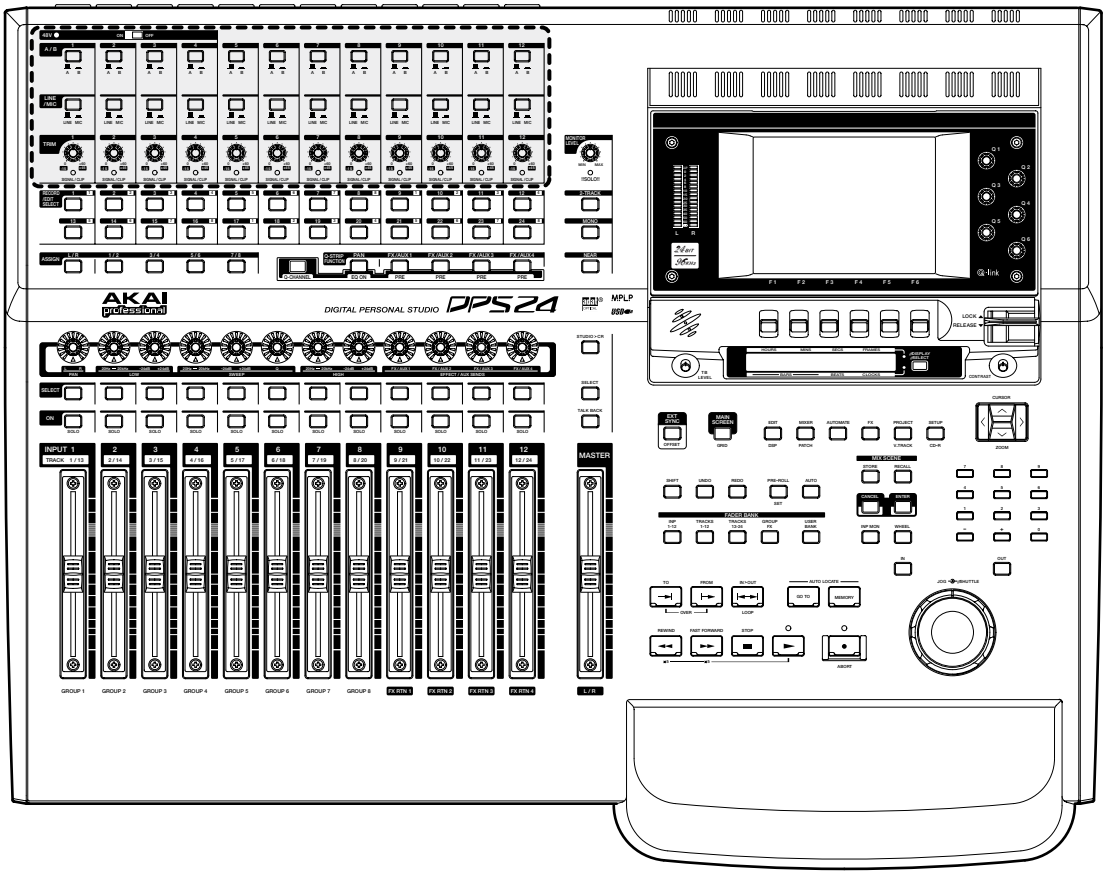
You get the picture!

And so far, unlike other digital mixers/recorders, all of this is achieved without hardly ever having to refer to the LCD!

To find out more, read on.

INPUTS

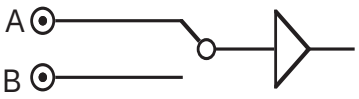
Across the top of the panel are controls associated with the twelve analogue input channels



The functions are:

48V ON/OFF — Switches on 48 volt phantom power to Inputs 1-4 allowing these channels to be used with condenser mics.

A/B — The switches running along the top switch between Input A or B.



LINE/MIC — The next row of switches set the input (TRIM) sensitivity between line (-<> +45dB) and mic (0dB <> +60dB).

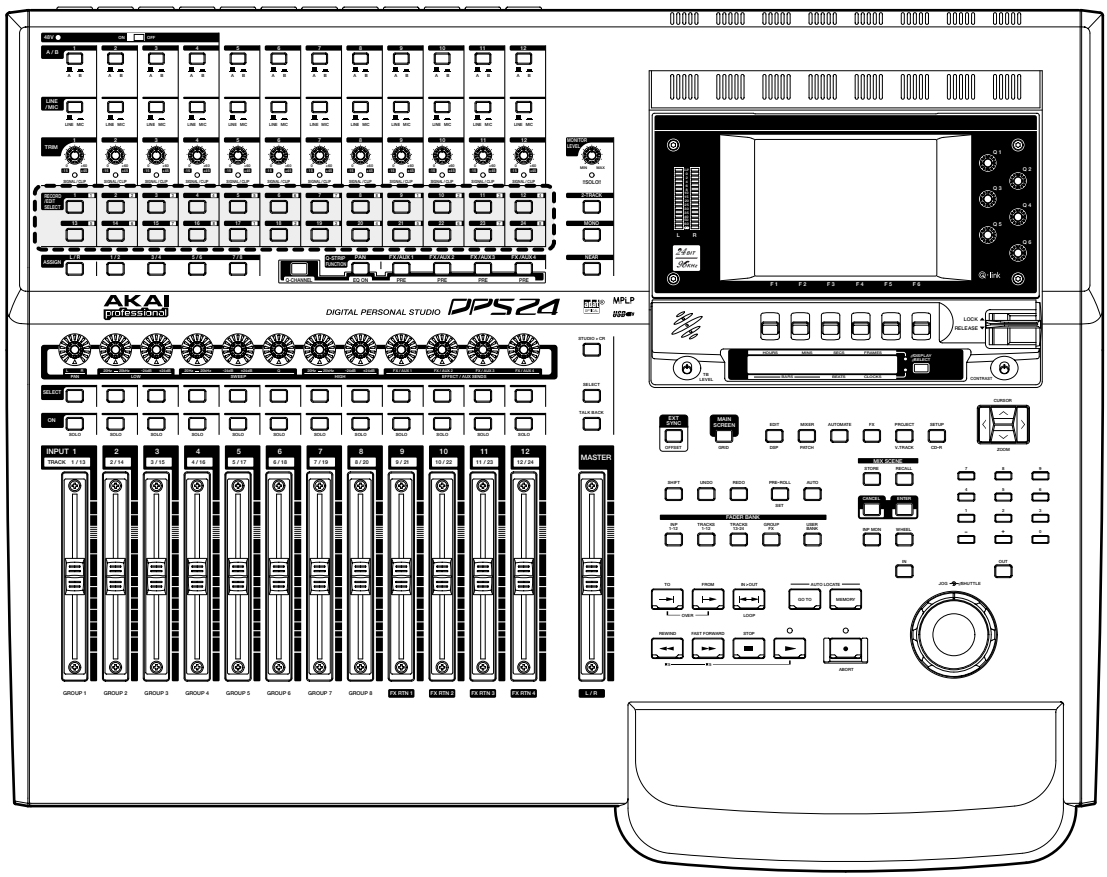
TRIM — This pot allows you set the input channel's initial gain according to the setting of the LINE/MIC switch

SIG/CLIP — This tri-coloured LED shows the level of the input signal *after* the input pre-amp. It illuminates as follows:

-60dB or less	OFF
-60dB -> -3dB	GREEN
-3dB	YELLOW
0dB	RED (clip)

RECORD/EDIT SELECT KEYS

Below the inputs are the RECORD/EDIT SELECT keys 1-24:



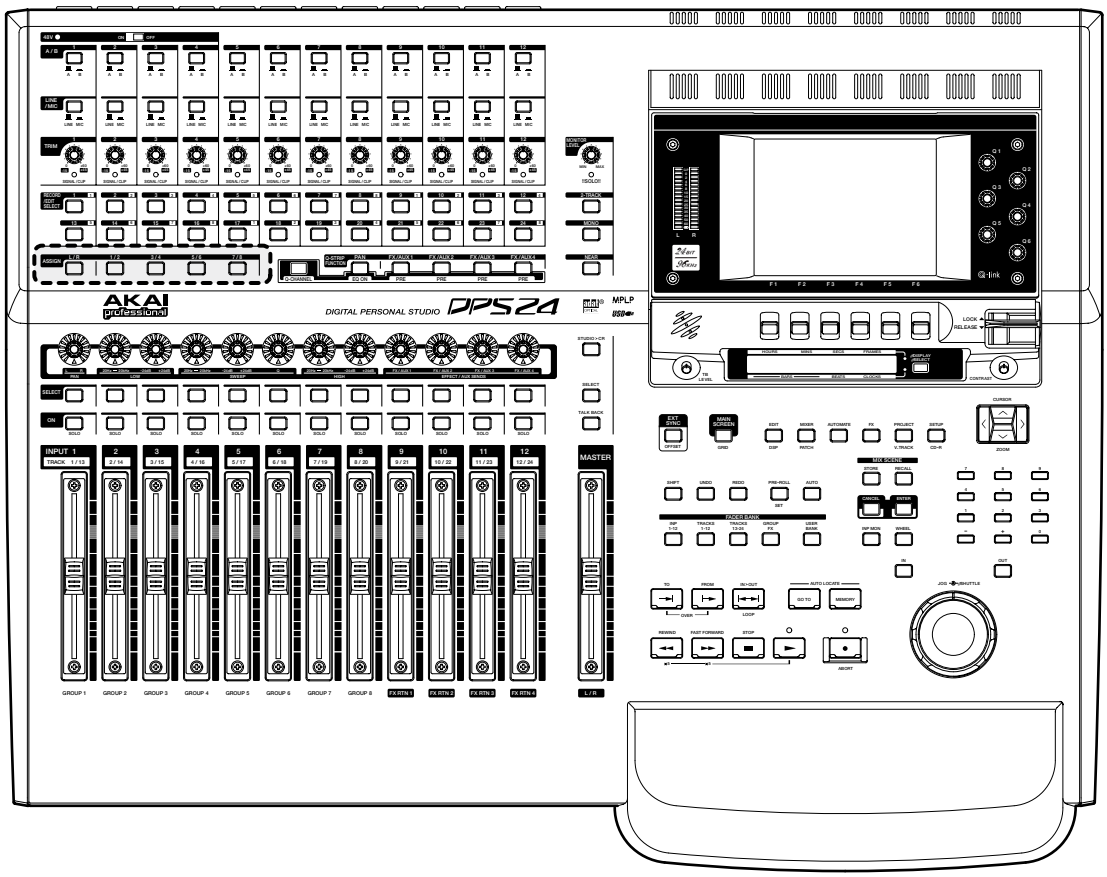
These keys have bi-coloured LEDs and normally, when recording, they illuminate red and are used to select tracks for record. However, when the EDIT mode is enabled, these keys illuminate green and are used to select tracks for editing.

The number shown to the right of each key shows the default Group assignment. As on a 'traditional' console/ recorder combination, the group outputs are patched to the disk tracks and channels are routed to them by way of the Groups. So, for example, to route Input 5 to Track 3, you would assign it to GROUP 3/4. To route, say, Tracks 1, 2, 3 and 4 to, say, Tracks 13 and 14 for a stereo bounce-down, you would assign them all to GROUP 5/6.

> ➳**NOTE :** *Because of the flexible patching facilities in the DPS24, it is possible to override the default group routing arrangement so the default assignment shown alongside the record track numbers may not be applicable if you have changed them. Routing and patching is explained in more detail later in this manual.*

GROUPS

Below the RECORD/EDIT SELECT keys to the left of the panel are the ASSIGN keys:



These allow you to route signals to the groups and also to the stereo L/R bus.

To route any channel to a Group (and hence to the track(s)), press the desired GROUP key. The SELECT keys for any channels assigned to that group will illuminate whilst those that aren't assigned will flash. Press the channel SELECT keys for the channels you wish to assign (or press an illuminated key to de-assign a channel).

> ***NOTE 1:*** *If a channel SELECT key is not lit, it means that the channel in question cannot be routed to that bus. This applies to GROUP, AUX and MIDI mixer channels.*
>
> ***NOTE 2:*** *Almost any channel can be assigned to any group. However, it is not possible to assign groups to groups. Groups can be assigned to the stereo L/R bus, however.*

To assign a channel to the stereo L/R bus, press the L/R key. The SELECT keys for any channels assigned to the stereo L/R bus will illuminate (and those that aren't will flash). Press the channel SELECT keys for the channels you wish to assign (or press an illuminated key to de-assign a channel).

SUB-GROUPING CHANNELS TO THE STEREO L/R BUS

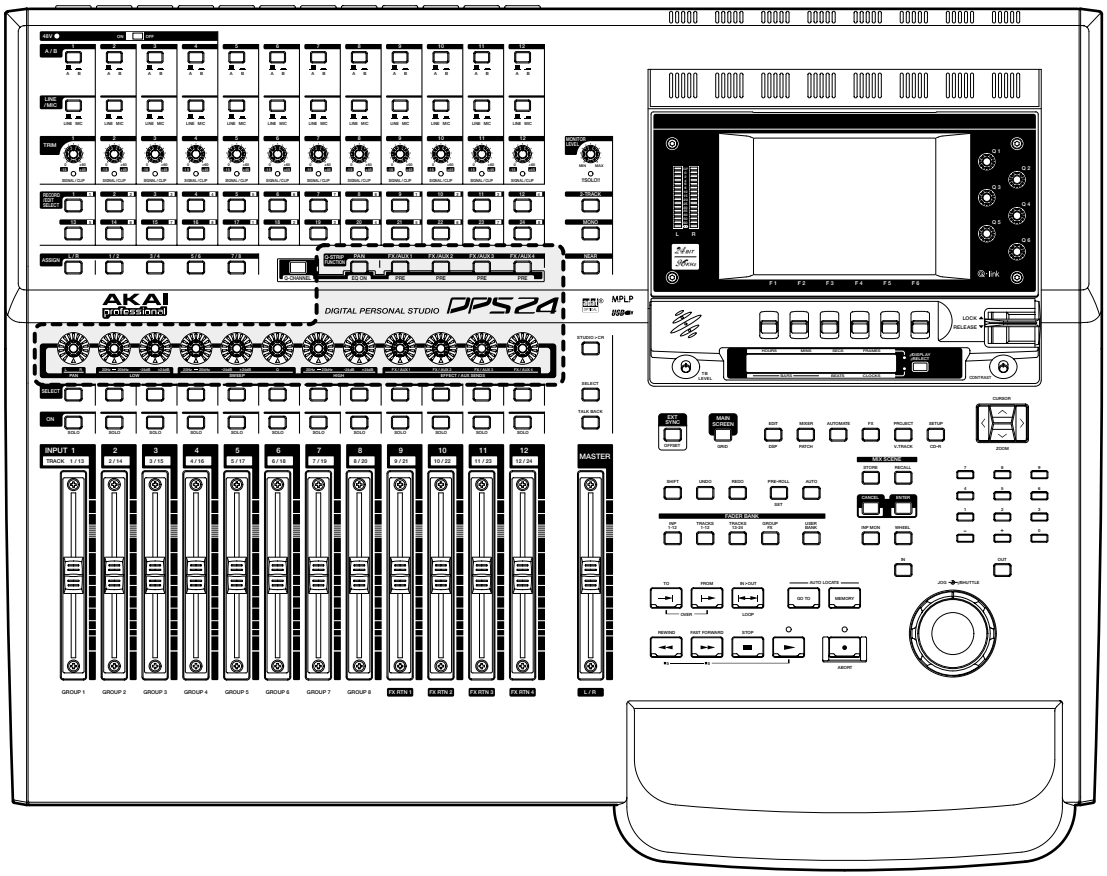
Very often (especially during mixdown), it is very useful to be able to sub-group certain channels to the stereo L/R bus via the Groups. For example, all your drums and percussion channels could be sub-grouped to one group, all your keyboard parts to another, all your backing vocals to another, etc., so that you have control over these elements with a single Group fader.

Routing groups to the stereo L/R bus is done simply by pressing the L/R key and, in the GROUPS/FX fader bank, pressing the group channels' (1-8) SELECT key(s) as appropriate. This is consistent with assigning other channels to groups.

> ***NOTE :*** *Channels which are routed to a sub-group need to be taken out of the stereo L/R bus to avoid them appearing twice - once through the direct connection of the channel to the stereo L/R bus and secondly through its connection to the stereo L/R bus via the subgroup.*

Q-STRIP FUNCTION KEYS/CHANNEL ENCODERS

Below the RECORD/EDIT SELECT keys to the left of the panel are the Q-STRIP FUNCTION keys:



Directly above the channel faders is a row of continuous rotary encoders (the Q-STRIP) with a 'collar' of LEDs around each of them that serve a variety of purposes. On power up, their default function is to act as PAN controls with one pan control for each of the channels. However, they may be used to set FX/AUX send levels. This functionality is selected using the Q-STRIP FUNCTION keys:

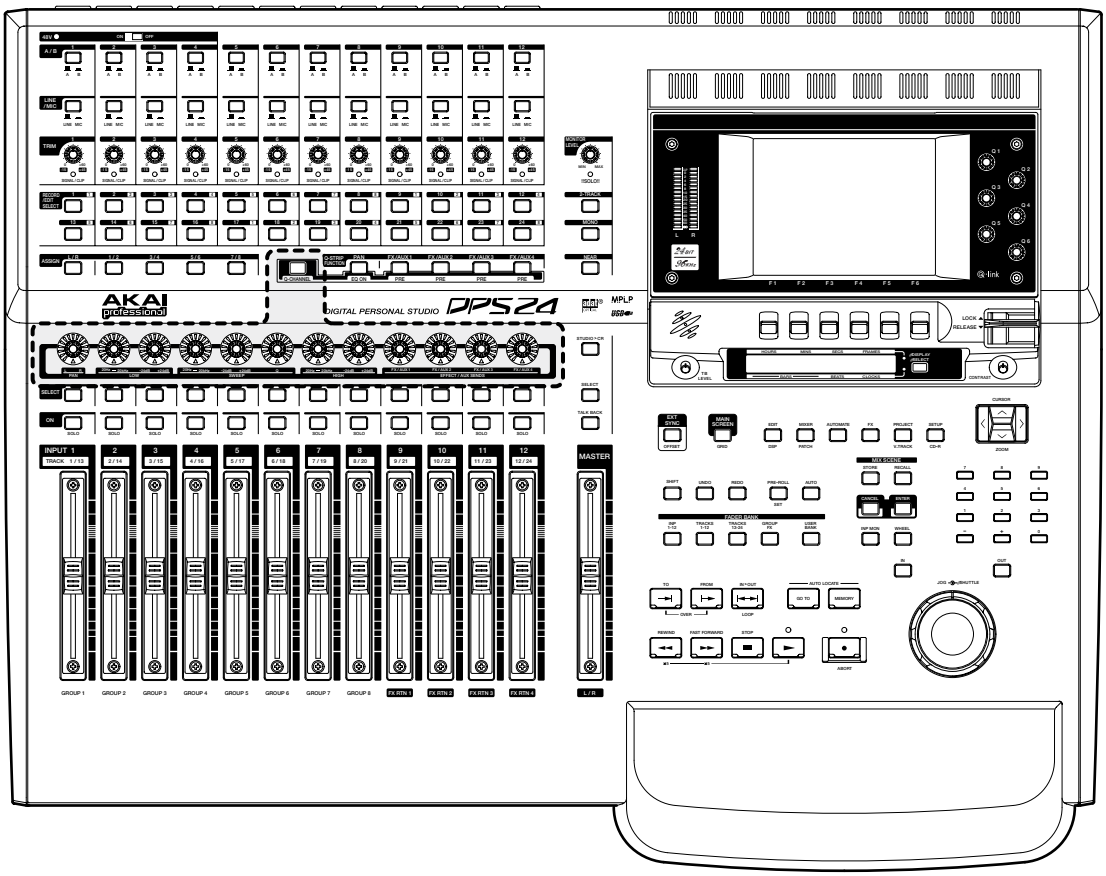
PAN — Sets the rotary encoders to act as pan controls for each of the channels.

FX/AUX 1-4 — Sets the rotary encoders to act as send levels for the internal effects channels or to the AUXILIARY bus.

> ***NOTE :*** *If the sends are configured as stereo sends, FX1/AUX1 sets the send level and FX2/AUX2 sets the pan position. The same is true for FX/AUX3/4 - if set to stereo, FX3/AUX3 sets the level and FX4/AUX4 sets panning.*

Q-CHANNEL SELECT/Q-CHANNEL ENCODERS

In the centre of the panel is the Q-CHANNEL key:

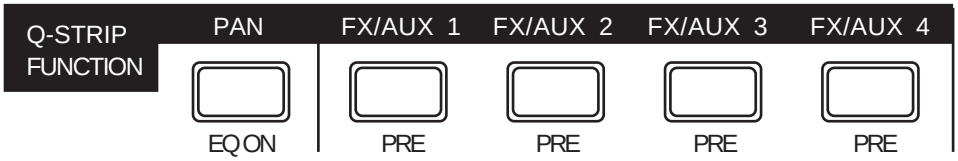


One of the most useful features of the DPS24 is that the row of encoders directly above the faders can be switched to become a complete channel's worth of parameters allowing you to have 'hands-on' control of panning, EQ and FX/Aux sends. This 'mode' is enabled by pressing the Q-CHANNEL switch located centrally on the upper panel. When this key is illuminated, the encoders function as a complete channel strip as follows from left to right:

PAN
LOW SHELF EQ FREQUENCY[1]
LF GAIN
SWEEP EQ FREQUENCY
SWEEP EQ GAIN
SWEEP EQ 'Q'
HIGH SHELF EQ FREQUENCY[1]
HF GAIN
FX/AUX 1 SEND LEVEL
FX/AUX 2 SEND LEVEL
FX/AUX 3 SEND LEVEL
FX/AUX 4 SEND LEVEL

[1] Although these EQ controls are labelled LOW and HIGH, they actually cover the full frequency range of 20Hz to 20kHz. However, LOW is a low frequency shelving filter and HIGH is a high frequency shelving filter.

Furthermore, the function of the Q-STRIP FUNCTION keys described earlier also change when the Q-CHANNEL is enabled:



The labelling underneath the keys denotes their function when in Q-CHANNEL ‘mode’ and you have ‘hands-on’ control to bypass the EQ and to switch FX/AUX 1-4 as pre- or post-fade.

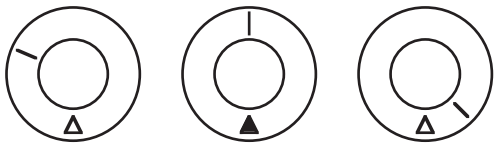
Of course, for the Q-CHANNEL ‘mode’ to be applicable, you must select a channel for editing (i.e. you should press a channel’s SELECT key).

Q-STRIP/CHANNEL ENCODERS

Around the encoders is a collar of LEDs that show the encoder's value. As the control is moved, so these LEDs illuminate to show its position. However, the way these LEDs illuminate depend on the control's function.

■ PAN POSITION / EQ FREQUENCY

When used as a pan pot, the LEDs around the encoders illuminate as follows:



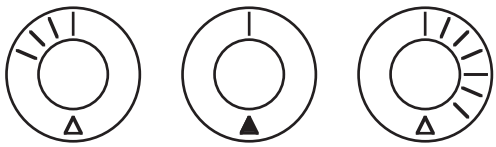
When the encoder is set to MID, the red LED at the bottom illuminates as well. This is to assist with viewing the encoder(s) at an angle where the top middle LED may not be visible.

■ LEVEL CONTROL

When the encoders are used as level controls (e.g. FX/AUX SEND), the LEDs illuminate as follows:

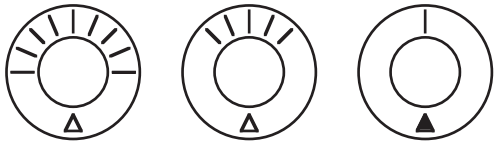
■ EQ GAIN

When the encoders are being used to set EQ gain in the Q-CHANNEL, the LEDs illuminate as follows:



■ EQ 'Q'

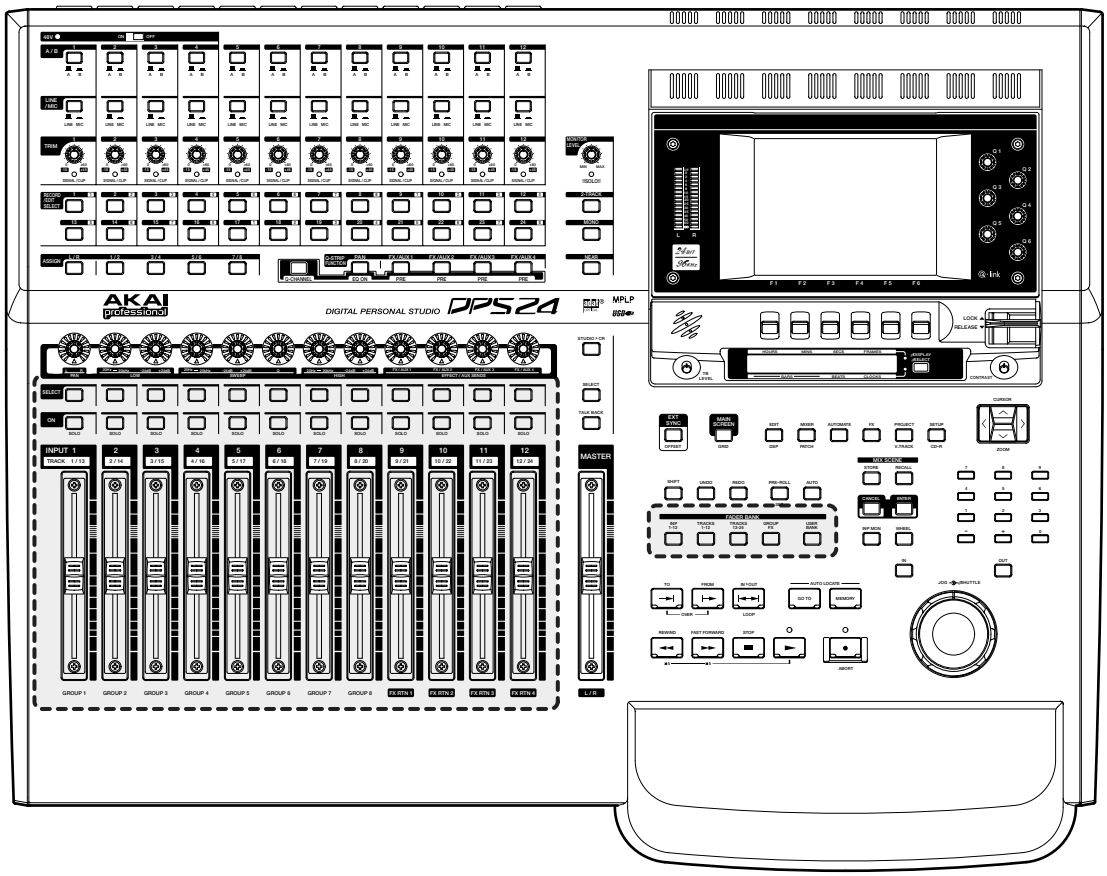
When the encoder is used to set EQ 'Q' in the Q-CHANNEL, its' LEDs illuminate as follows:



In this way, the control gives an almost graphic indication of the 'width' of the sweep EQ. With the control at minimum, the Q is at its widest; at maximum, the Q is at its narrowest.

FADERS/FADER BANKS

Below the DPS24's Q-STRIP/CHANNEL encoders are the channel faders and SELECT and ON/SOLO keys:



Each channel is identical whether it's an input or a disk channel (the GROUP/FX channels are different and those differences are described on the next page). Each channel has a long throw 100mm motorised fader which is touch sensitive for use with the mixer's automation and simply touching the fader will make it active.

A channel can be selected for editing using the channel SELECT key above each fader. The SELECT key is also used to route channels to groups (and hence to disk tracks) for recording.

Channels may be muted using the green ON key. When the channel is ON, the key illuminates; when it is OFF (muted), the key is not lit.

By pressing SHIFT+ON, the channel can be solo'd. When a channel is solo'd, the ON key's LED flashes (and a large SOLO LED flashes in the MASTER section). SOLO operation is described later in the manual.

The different channels are selected using the FADER BANK keys located above the transport keys. The types of mixer channel types are as follows:

INPUTS	12 general purpose mixer channels which can be used to mix the DPS24's various input sources. The channels can also be used to add EQ and dynamics and also to send the channels to either the internal effects and/or the AUX bus.
TRACKS	24 mixer channels which are sourced from the internal disk recorder. The channels can also be used to add EQ and dynamics and also to send the channels to either the internal effects and/or the AUX bus.
GROUP	8 channels providing control of the 8 group bus master levels. Pan, EQ, dynamics and FX/AUX sends are not available on these channels.

FX RETURN	By default, these provide control the stereo returns of the internal effects with balance control and FX/Aux sends. However, these channels can be re-patched to mix any of the DPS24 input sources.
FX SEND	4 channels providing control of the 4 fx bus master levels.
AUX SEND	4 channels providing control of the 4 aux bus master levels.
AUX IN	A stereo auxiliary mixer channel allowing the AUX L/R inputs to be mixed to the stereo L/R bus with level and mute control only. This channel has a fixed source.
MIDI CONTROLLER	16 channels each providing 2 MIDI controllers which can be assigned to any MIDI channel or controller. Controller #1 is controlled by the channel fader and Controller #2 is controlled by the channel's PAN control. By default, these are configured to send MIDI Volume on Controller #1 and MIDI Pan on Controller #2.

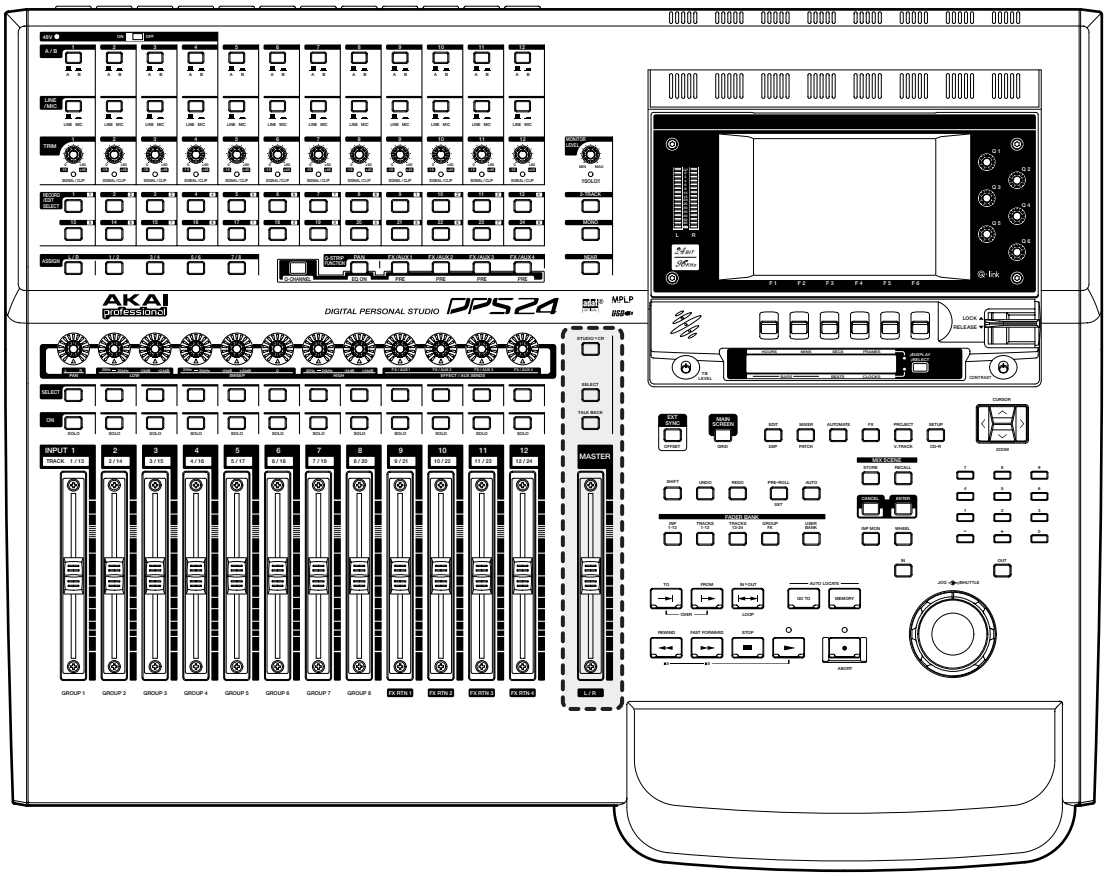
These channels are arranged by default as:

INPUTS 1-12	These default to mixing ADCs 1-12.
TRACKS 1-12	These default to mixing Tracks 1-12
TRACKS 13-24	These default to mixing tracks 13-24
GROUP/FX	By default, Channels 1-8 control the Group Output levels and Channels 9-12 control the stereo effects return levels for the internal effects.
USER	Selects a bank of channels that are user assignable. By default, they are assigned as follows:

Channels 1-4	Control the master send levels to the internal effects.
Channels 5-8	Control the master send levels to the AUX buss.
Channel 9	Controls the stereo level of the AUX IN to the stereo L/R bus
Channels 10-12	MIDI 1-3

MASTER SECTION

To the right of the channel faders is the MASTER fader:



The MASTER section also has a long throw, touch sensitive, motorised fader. By default, this controls the stereo L/R bus which, by default, appears at the STEREO OUT.

> ➳**NOTE :** *Due to the DPS24's flexible patching system, it is possible to route audio sources other than the L/R bus to the STEREO L/R output. If another audio source is patched to the STEREO output, the MASTER fader will not affect that audio source's level.*

Above the fader is a TALKBACK switch. This routes the internal talkback mic to the STUDIO outputs so that the engineer in the control room can talk to the 'talent' in a separate studio area. The key is a 'press-to-make' switch that needs to be held down for the talkback mic to be routed to the STUDIO outputs.

> ➳**NOTE :** *To facilitate this, the AUX 3/4 sends need to be configured to be sent to the STUDIO L/R outputs. This is set in the MIXER - FX/AUX SETUP page.*

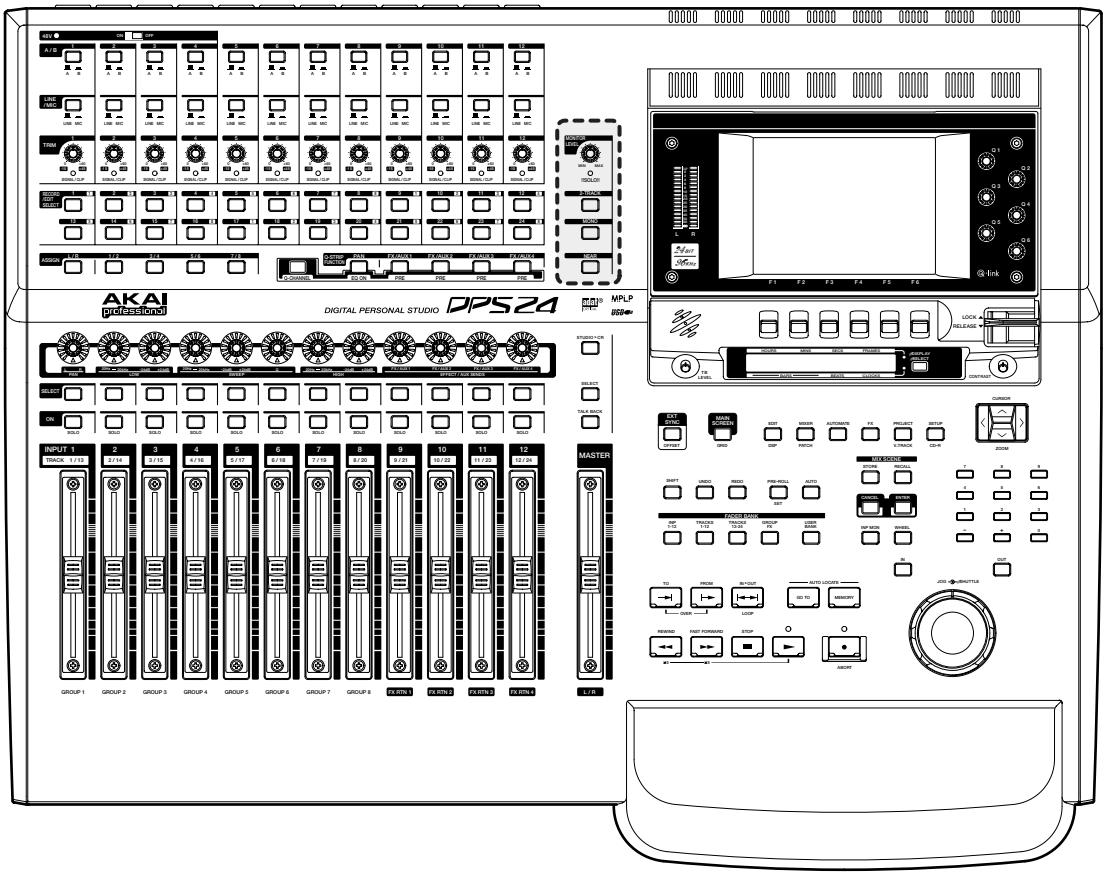
The illuminated SELECT key allows you to select the master channel for editing.

The illuminated STUDIO > CR key allows you to route the mix created on AUX 3 and 4 to the monitor output feeding the control room's monitoring system. In this way, it is possible for the control room engineer to set the mix up very conveniently on the control room's speakers.

The TALKBACK and STUDIO outputs are explained later in this operator's manual.

MONITOR SECTION

Directly above the MASTER section is the MONITOR section:



The functions are (from top to bottom):

MONITOR LEVEL — Sets the level of the signal appearing at the MAIN or NEARFIELD monitor outputs and also the headphone outputs.

!!! SOLO !!! — This LED illuminates whenever a channel is solo'd.

Although the channel's ON key flashes when it is solo'd making it perfectly obvious which channel is being solo'd, it is possible that a different FADER BANK may be selected and so the solo'd channel may not be visible (for example, Input 5 may be solo'd but the current FADER BANK might be, say, Tracks 1-12). As a result, it may not be clear that a channel is solo'd. This 'master' SOLO LED helps overcome this by showing that a channel somewhere is solo'd.

2-TRACK — This switches the 2-TRACK input into the main monitor output, overriding the main L/R mix. Normally, this will be used after a mixdown to check the master recorder's output.

However, because the 2-TRACK switch exists only on the monitor output, it can actu ally be used during mixdown so that you can 'confidence monitor' the output of your master recorder on the control room speakers by hearing the output of your mastering machine as you mixdown.

MONO

This switches the monitor output to mono. Switching to mono does not affect the stereo L/R bus, only the monitor outputs (MAIN and NEARFIELD). Thus it is possible to check a mix in mono on the control room speakers without affecting the mix to the master recorder.

Similarly, when monitoring the 2-TRACK input (either after or during mixdown), it is possible to switch to mono for reference checking.

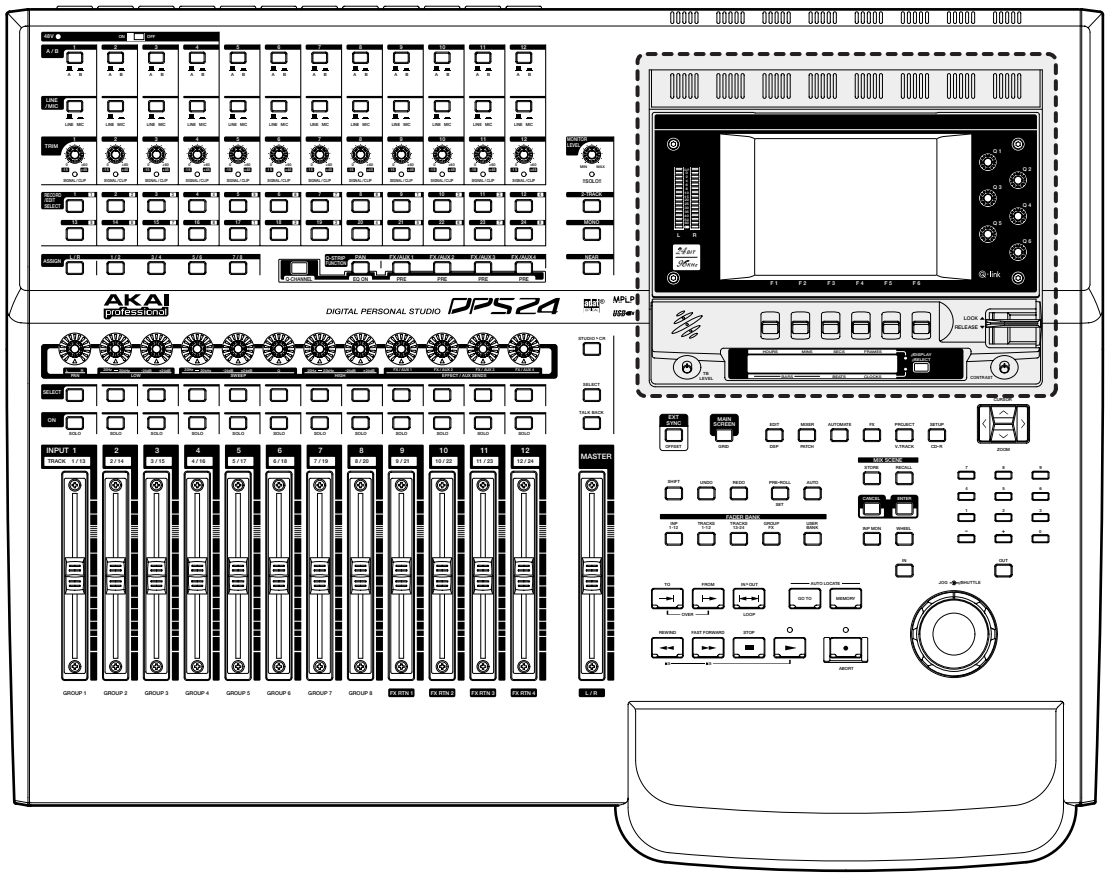
NEAR

This switches the monitor output from the MAIN outputs to the NEARFIELD connections on the rear panel.

Typically, the MAIN outputs of the DPS24 will be connected to a high quality, high power amp/speaker monitoring system whilst the NEARFIELD outputs will be connected to a smaller system, perhaps even a domestic hi-fi amp powering smaller speakers. Thus, with NEAR switched OFF, monitoring will be via the MAIN monitor outputs but with NEAR switched ON, monitoring will be via the smaller amp/speakers. In this way, you can switch between monitoring systems quickly and conveniently from the DPS24's panel.

LCD 'POD'

Top right of the panel is the adjustable LCD 'pod':



You may adjust the viewing angle of the LCD from almost flat to almost upright. To change the viewing angle, pull the large LOCK lever downwards and tilt the LCD to a comfortable viewing angle. Once the LCD is at the right angle, push the lock lever upwards. Be careful not to adjust the viewing angle when the LOCK lever is in lock position and do not exert undue force when adjusting the viewing angle.

To the left of the LCD are the stereo L/R bus level meters - these show the master level as set by the MASTER fader. When a channel is solo'd, depending on the selected solo status (i.e. PFL, AFL or SIP), these meters show that channel's level. When used with inputs, input levels may be set more accurately using these meters than using the LCD's meters.

To the right of the LCD are the six Q-Link pots. These are used to set parameters on the LCD.

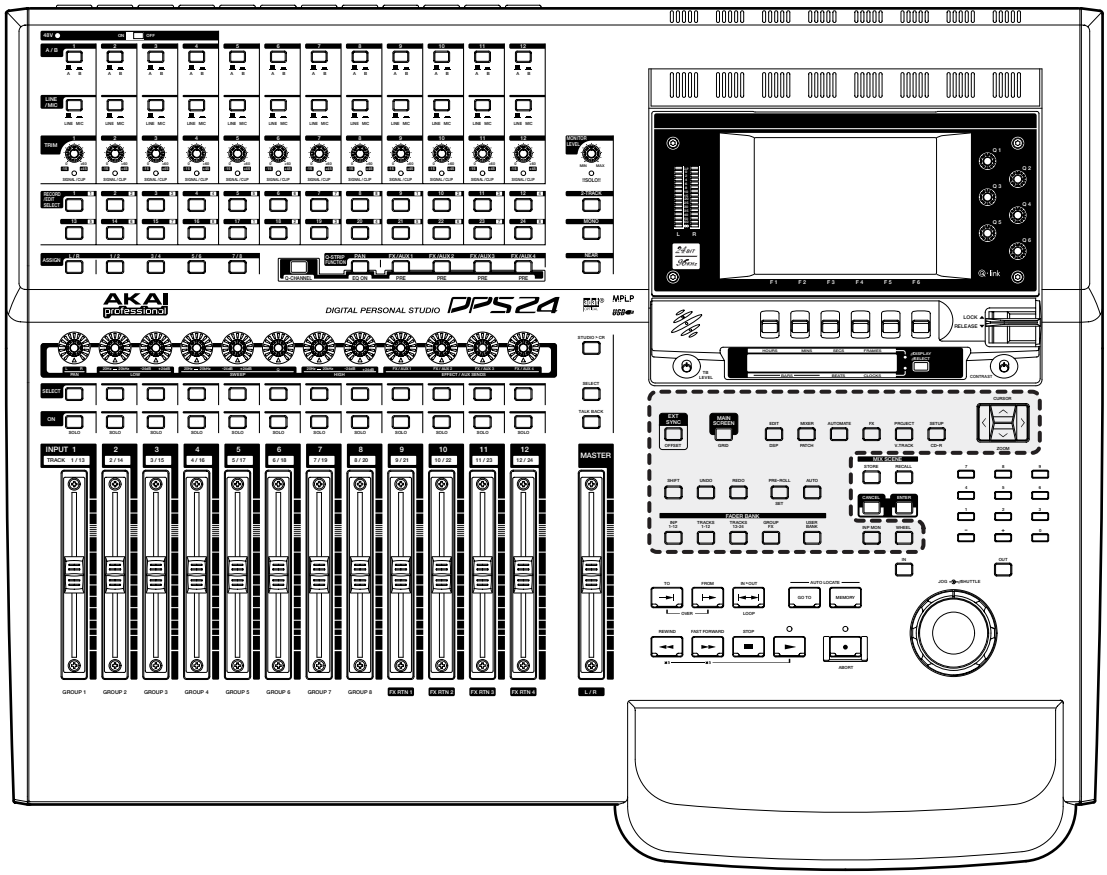
Below the screen are six 'soft' keys, the functions of which change according to the screen being displayed.

To the left of the function keys is a simple talkback mic. Its level can be regulated using the TB LEVEL pot directly below it.

Underneath the function keys is a dedicated timecode display. This can be switched between timecode (hours : minutes : seconds : frames) and BBC (Bars : Beats : Clocks) using the DISPLAY SELECT key to its right, Display status is indicated by two small LEDs between the display and the DISPLAY SELECT key.

Finally, the CONTRAST control allows you to adjust contrast for the best view according to your viewing angle.

MAIN CONTROL SECTION



Here, you find the following functions:

EXT SYNC	This allows you to sync the DPS24 to external timecode. When the key is pressed (and the LED illuminated) the DPS24 will not play and/or record unless it is receiving external timecode. Its SHIFT function allows you to set timecode offsets.
MAIN SCREEN	This is the main operating screen that one normally works in. It shows the project name, meters and an overview of the project. Its SHIFT function shows an enlarged project display.
EDIT	Allows you to edit audio with functions such as copy, cut, paste, etc. This mode's shift function gives access to the DPS24's off-line DSP functions such as timestretch, pitch shift, etc.
MIXER	Allows access to certain mixer and channel views. Its SHIFT function shows the PATCH pages where you may route signals within the DPS24.
AUTOMATE	Provides access to the DPS24's automation functions.
FX	Takes you to the effects pages where you may select and edit the DPS24's internal effects.
PROJECT	Allows you to load and create projects. Its SHIFT function gives access to the 'virtual tracks' function.

SETUP — Allows you to set global parameters that affect the DPS24 as a whole.

Its SHIFT function allows access to the CD-R functions for backing up to, mastering to and playing back from the (optional) CD-R.

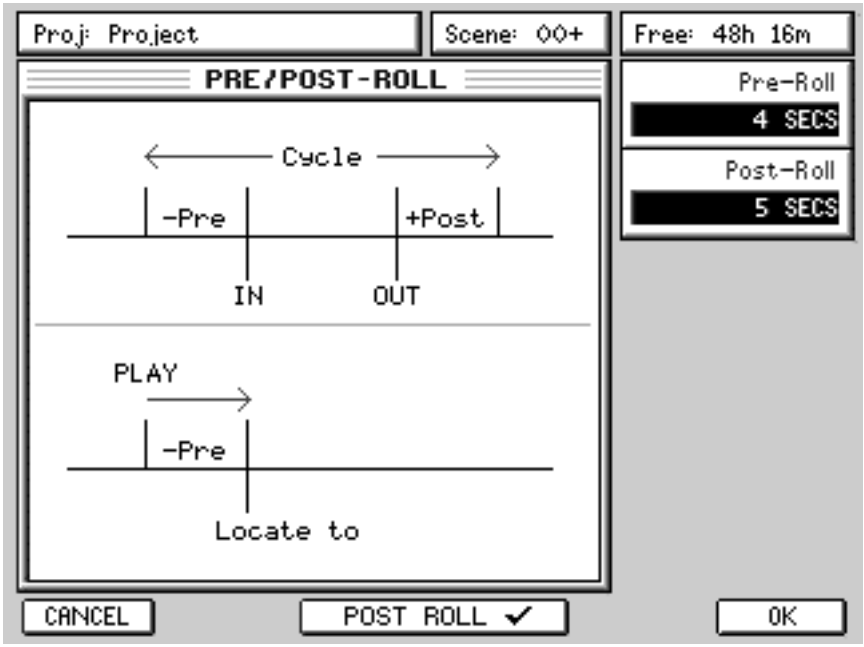
CURSOR — Allows you to move around the screen where applicable. Its SHIFT function allows you to zoom in horizontally and/or vertically on track and/or waveform displays in certain modes.

SHIFT — Accesses certain keys' sub-functions labelled in white below the key.

UNDO/REDO — These keys allow you to undo and redo operations. Multiple undo/redo operations are possible.

PRE-ROLL — The PRE-ROLL key allows you to add an offset to locate points and CYCLE loops. When switched on, any locates you do will be to the locate point minus the pre-roll. For example, with a pre-roll of 5 seconds, if you locate to 00:01:00:00, you will actually locate to 00:00:55:00.

Its SHIFT function allows you to set the PRE/POST-ROLL times:



The parameters are:

PRE-ROLL — Sets the pre-roll time

POST-ROLL — Sets the post roll time (if enabled on F3/4)

POST-ROLL can be optionally enabled using F3/4. If enabled, switching PRE-ROLL on will also switch on post-roll.

AUTO — Activates the AUTO record function. When AUTO is switched on, monitoring switches from disk to input at the IN time on the selected track(s) and switches back to disk playback at the OUT point. Thus you can rehearse the recording simply by switching AUTO on.

By pressing RECORD and PLAY before the IN point, however, the project will play up to the IN point monitoring off disk, will switch to input and drop into record at the IN point up until the OUT point where it will drop out of record and switch back to monitoring off disk.

Used in conjunction with the PRE/POST-ROLL function and CYCLE, you can cycle round the IN/OUT points with the PRE-POST-ROLL offsets to repeatedly rehearse a take - when you ready, press PLAY+RECORD (or the footswitch) to commit the recording.

For example, if the IN time is set to 00:01:00:00 and the OUT time is set to 00:01:20:00, with PRE-ROLL and POST ROLL set to 5 seconds each, with CYCLE switched on, the DPS24 will play around 00:00:55:00 to 00:01:25:00 switching monitoring/punching in/out at 00:01:00:00 and 00:01:20:00 respectively. To hear the recording, you should switch AUTO off.

FADER BANK — Selects which channels the 12 'physical' channels will control.

INP MON — Switches selected inputs to monitor. When INPUT MONITOR is switched off (the default), monitoring is as follows on the selected RECORD tracks:

PLAYBACK	Monitor disk
RECORD	Monitor input
STOP	Monitor input

Thus, when playing up to a record punch-in (manual or automatic), you hear the track(s) selected for record playing back. At the point of the punch-in, monitoring switches to INPUT and you will hear what you are playing/recording. At the point of punch-out, monitoring reverts to disk playback. When playback is stopped, you hear the inputs.

When INPUT MONITOR is switched on, you hear the inputs through the tracks selected for record at all times (i.e. during playback, recording and when the DPS24 is stopped).

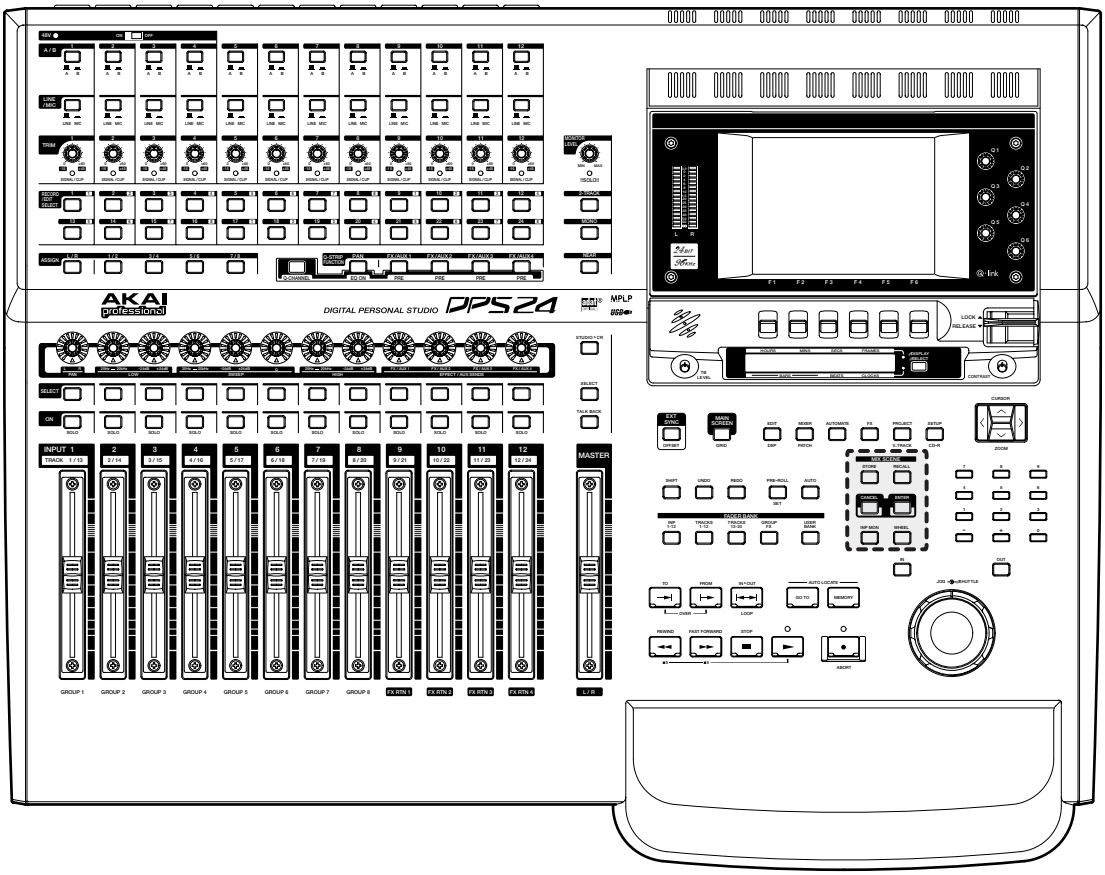
WHEEL — Turns the JOG/SHUTTLE wheel on or off.

CANCEL — Cancels/aborts prompt driven actions (for example, editing, deleting, naming, scene recall, autolocate recall, etc.).

ENTER — Proceeds with any prompt driven actions about to take place (for example, editing, deleting, naming, scene recall, autolocate recall, etc.).

➳**NOTE :** *Cancel and Execute are also shown on the LCD in such circumstances. The dedicated keys are provided for convenience when using functions such as scene and/or autolocate recall, etc., where it may not be convenient to reach up to the LCD.*

MIX SCENE



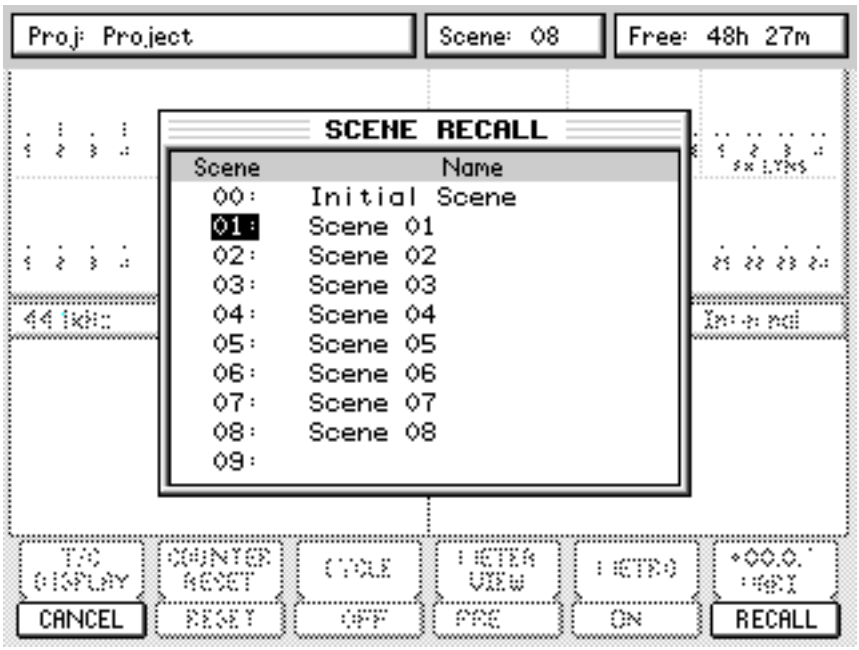
In a single DPS24 project, you can store and recall up to 100 ‘mix scenes’. These are ‘snapshots’ of the mixer’s settings such as EQ, fader position, FX sends, etc. The following table shows what is and isn’t stored in scene:

SAVED	NOT SAVED
FADER	INPUT A/B STATUS
PANPOSITION	INPUT SETTIINGGS
CHANNEL ON/OFF	MIC/LINE SELLECTION
FX/AUX SED LEVELS	MONITOR LEVEL
FX/AUX ROUTINGS	MAIN/NEAR STATUS
GROUP ROUTINGS	MONO MONITOR SWITCH STATUS
L/R ROUTING	TALKBACK BUTTON STATUS
EQ	TALKBACK LEVEL
DYNAMICS	SOLO STATUS
INPUT SOURCE	RECORD PATCHING
CHANNEL LINK	OUTPUT PATCHING
PHASE INVERT	
ATTENUATION	
INTERNAL FX SETTINGS	

Scenes are recalled using the SCENE RECALL key and are stored, not surprisingly, using the SCENE STORE key.

To recall a mix scene, if you know the scene number you want to use, recalling a scene is simply a matter of pressing RECALL (the key will flash), typing in a two-digit number (00-99) on the adjacent numeric keypad followed by pressing ENTER (which also flashes when RECALL is pressed). The scene will be recalled.

When you press RECALL, a pop-up is also shown on the LCD:



As well as the numeric keypad, you can use the CURSOR UP/DOWN keys to move through the list and you can press the ENTER key or F6 - RECALL - to recall the selected scene. The prompt will close when the scene is recalled.

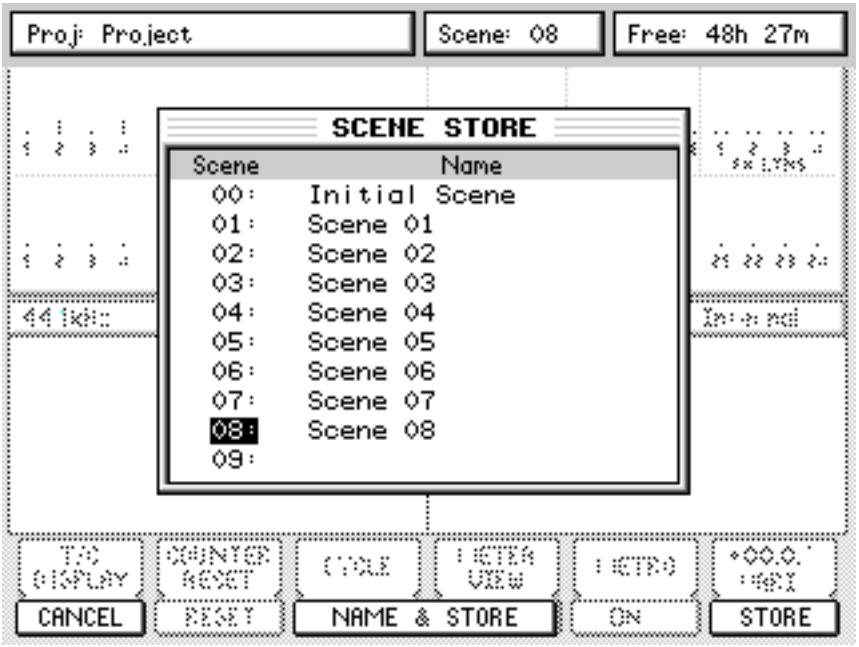
IMPORTANT NOTE ABOUT SCENE 00 : INITIAL SCENE

Scene 00 holds the initial state of the mixer for the project and is recalled whenever a project is loaded or an automation pass is started. This means that when the dynamic automation is ON, scene 00 will be automatically recalled whenever PLAY is pressed to ensure that all the controls, including those which are not dynamically automated, are set to the correct value in relation to the current playback time. It is therefore important to ensure that you store the required mixer state to scene 00 before starting to use the dynamic automation and update it whenever you want to change the initial state of a control during automation playback.

As an example, Scene 00 in your project has all channels' EQ set 'flat' (i.e. no EQ applied). Some way through the project, however, you adjust one channel's EQ. When you press PLAY, that channel's EQ will be reset to the settings stored in Scene 00. Another example is that you set a pair of channels to be linked as a stereo pair at some point and set each channel's pan position to hard left and right respectively - when you press PLAY, if that link and the pan positions have not been saved into Scene 00, they will be reset.

In other words, if you make a change that you like to any parameters that are not dynamically automated, ensure that you store the changes in Scene 00 so that they are recalled with the dynamic automation.

To store a mix scene, press STORE (the key will flash). You will see something like this pop-up prompt:



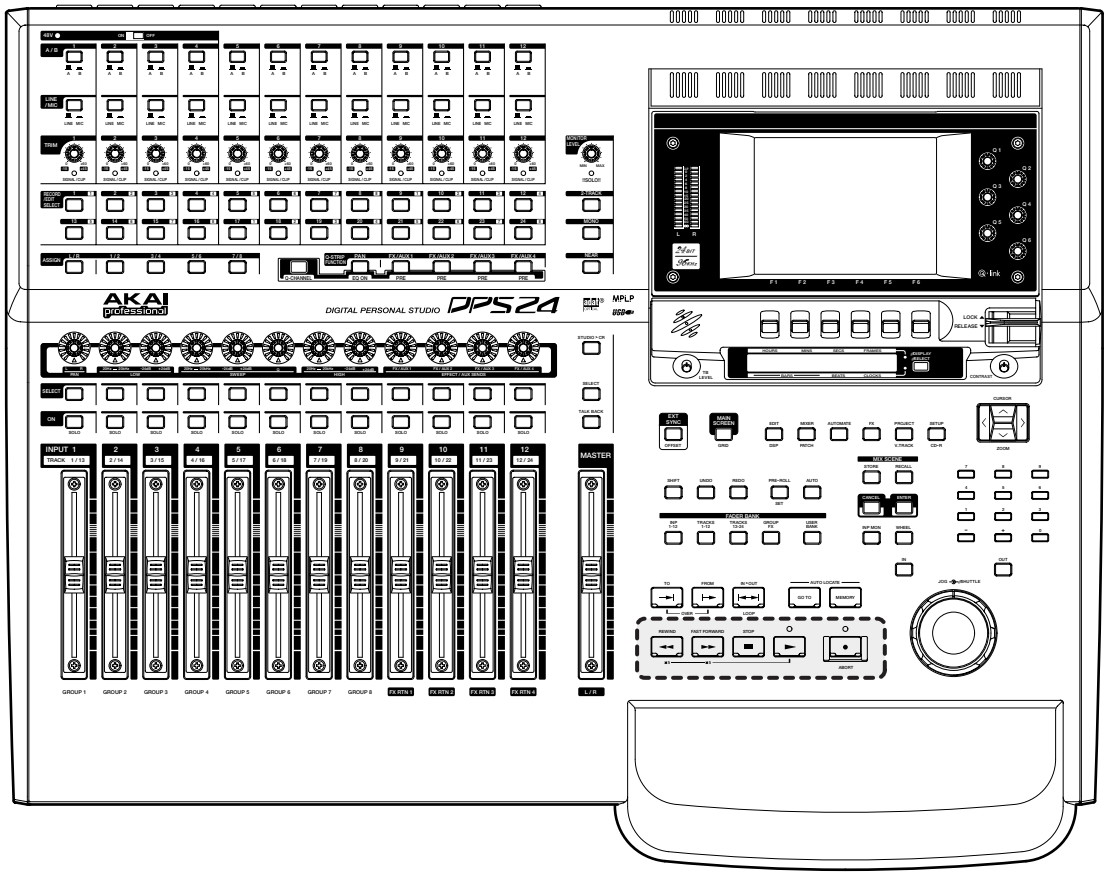
You should use the CURSOR keys to move up or down the list of available mix scenes to select an 'unused' mix scene if you want to store a new scene. If you press the flashing ENTER key or STORE [F6], the scene will be stored.

However, if you know the number of the next unused mix scene, you can simply type that two-digit number (02, 22, 54, whatever) followed by ENTER or STORE [F6]. Again, the scene will be stored and will use the default name "SCENE *nn* (where *nn* is the scene memory number).

If you know the number of a mix scene you would like to overwrite, type the number on the numeric keypad and press ENTER/STORE. The scene will be stored with the original name.

It is also possible to name scenes using NAME+STORE [F3/4]. Pressing this will pop-up the usual naming prompt and you can name the scene as appropriate. If the scene memory is an existing one, the new name will overwrite the original.

TRANSPORT KEYS

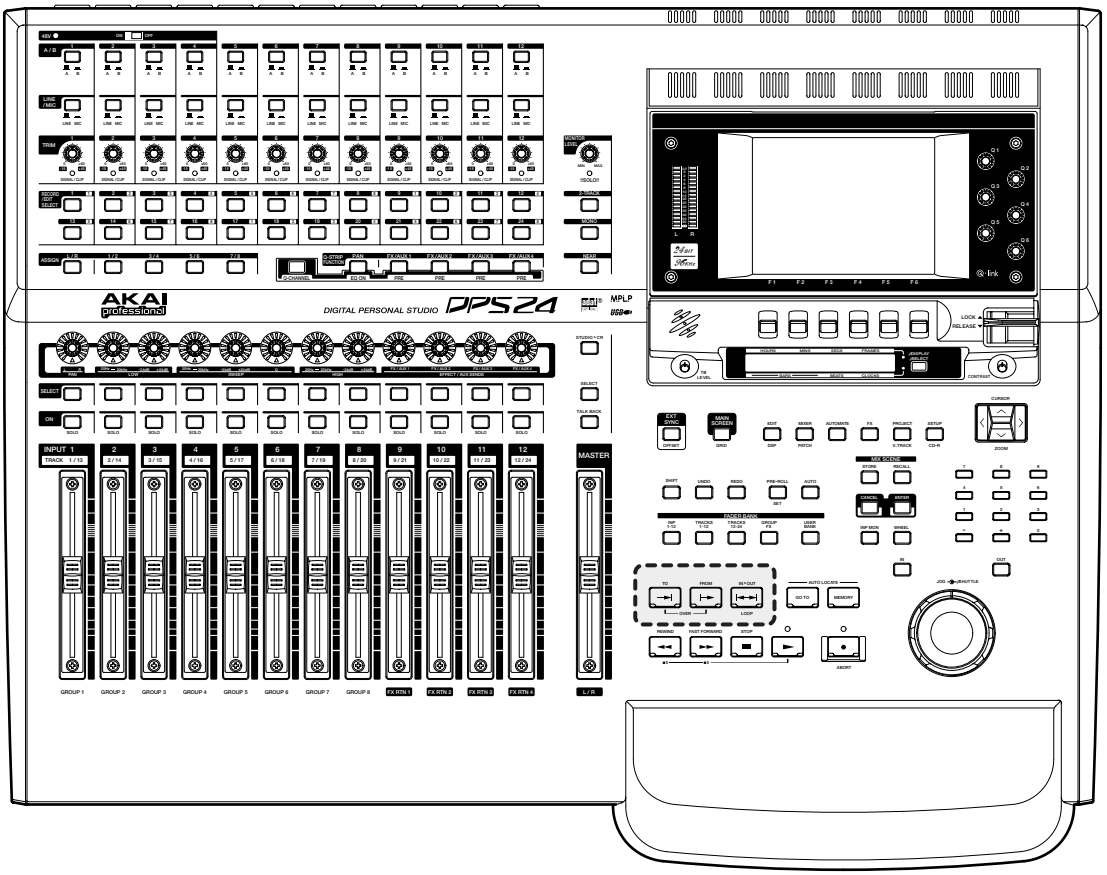


A standard transport key layout is provided. The functions are:

REWIND	Rewinds the project at x10 normal play speed. Pressing REWIND when a project is playing will rewind it at x5 speed with 'tape chatter' as on an analogue reel-to-reel.
FAST FORWARD	Fast forwards the project at x10 normal play speed. Pressing FAST FORWARD when a project is playing will fast forward it at x5 speed with 'tape chatter' as on an analogue reel-to-reel.
STOP	Stops playback, rewind, fast forward, etc.
PLAY	Plays the selected project. Pressing PLAY whilst recording will cause the DPS24 to drop-out of record.
RECORD	This allows you to record. To drop into record whilst the project is playing, press and hold PLAY and then simultaneously press RECORD (i.e. like a normal MTR). You can also start recording from stopped - press and hold RECORD and simultaneously press PLAY. Recording will begin as soon as playback commences. To drop out of record, simply PLAY or STOP. You can also abort recording at any time by pressing SHIFT+RECORD. This will drop out of record and will delete the recording from the project and from disk.

EDIT PLAY KEYS

Above the main transport keys are special ‘edit play’ keys:

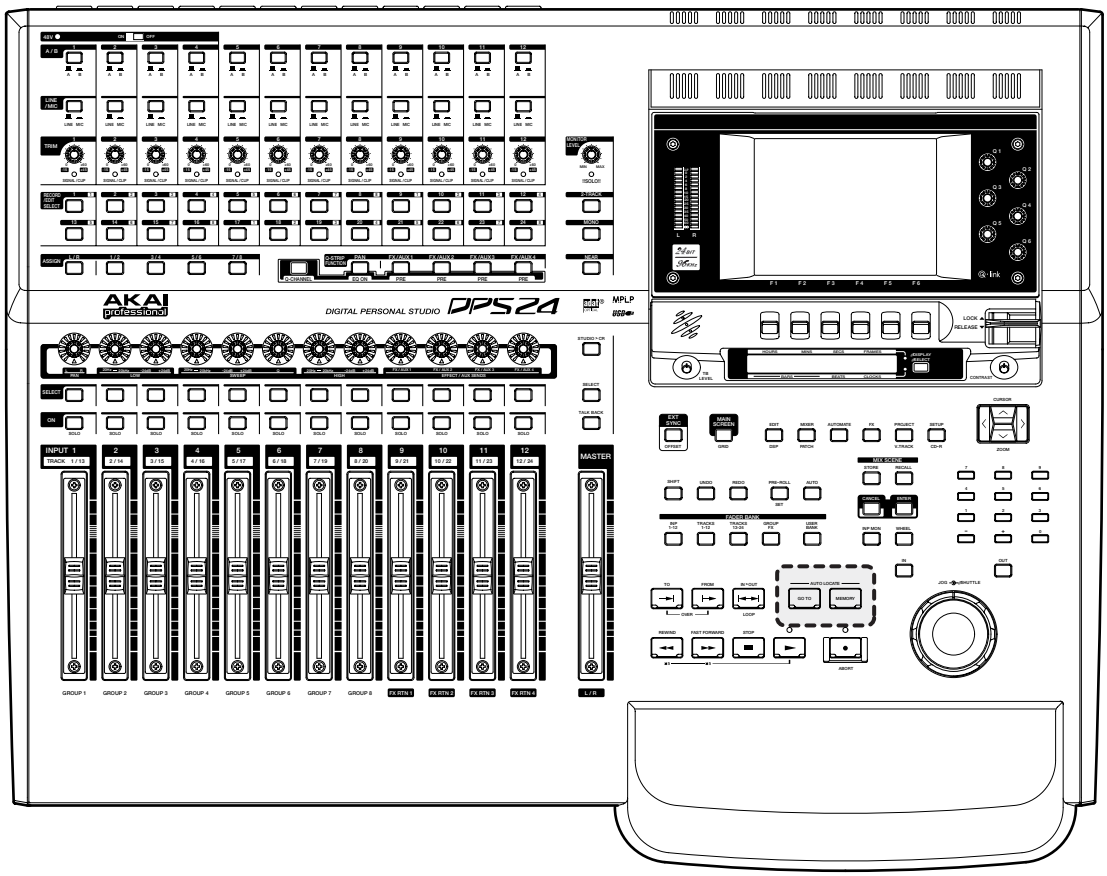


Their functions are:

TO	Plays up to the current NOW time. The play-to time can be set in the SETUP mode.
FROM	Plays from the current NOW time. The play-from time can be set in the SETUP mode.
PLAY OVER	Pressing TO and FROM together will play over the current NOW time. The to/from time depends on the value set for PLAY TO and PLAY FROM in the SETUP mode.
IN>OUT	Plays between the IN/OUT markers. Its shift function - LOOP - allows you to play the IN/OUT region repeatedly in a loop and is useful for auditioning how an edit may sound when played repeatedly (i.e. when pasted or inserted several times end-to-end).

AUTOLOCATOR

Next to the EDIT PLAY keys are the AUTOLOCATE keys:



Their functions are:

GOTO — Pressing this key allows you to locate to one of 100 (00-99) previously stored locate points.

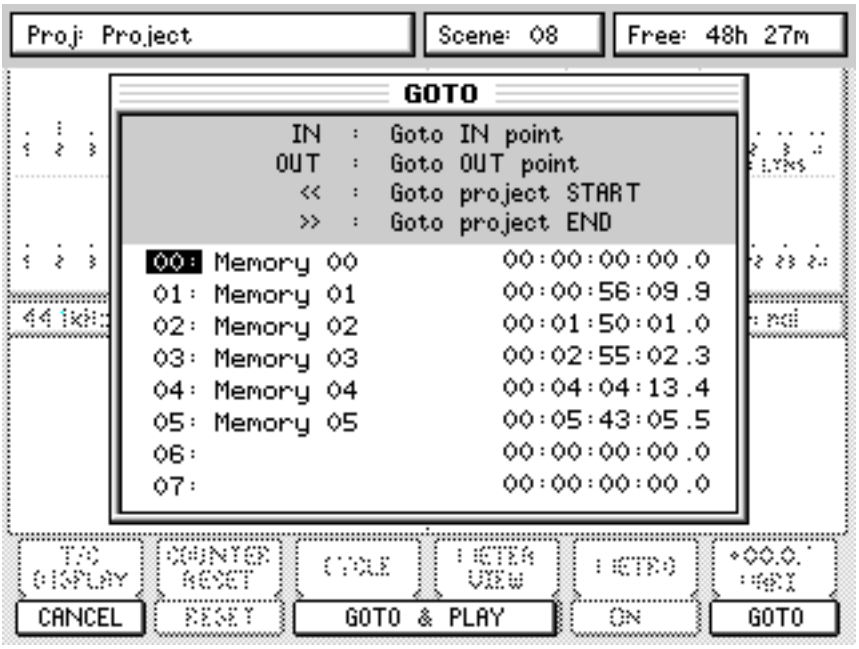
Pressing SHIFT+GOTO pops up a window that allows you to enter a locate time value with the numeric keypad.

MEMORY — Pressing this key allows you to store a locate point.

USING THE AUTOLOCATOR

If you know the locate number you wish to go to, simply press the large GOTO key, enter a two-digit number on the numeric keypad and hit the flashing ENTER key - the project will locate to that autolocate memory. The function works whether the project is playing or not. If the project is playing, pressing GOTO will cause playback to stop and it will locate to the selected memory. Press PLAY to play from that point.

Although the GOTO function is designed to be used 'blind' without referring to the LCD , when you press GOTO, a prompt is also shown on the LCD:



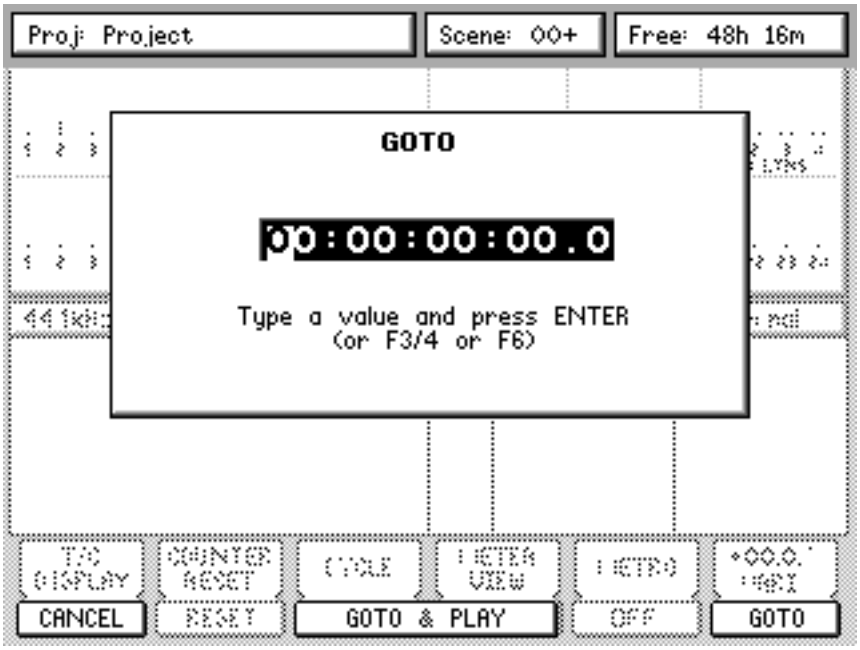
You can.....

- Press GOTO followed by IN to locate to the IN point
- Press GOTO followed by OUT to locate to the OUT point
- Press GOTO followed by REWIND to locate to the start of a project
- Press GOTO followed by F.FWD to locate to the end of a project
- Press GOTO and use the NUMERIC keypad to type in a locate memory number followed by ENTER or GOTO [F6] or GOTO & PLAY [F3/4]
- Press GOTO and CURSOR UP/DOWN to select a memory to locate to followed by ENTER or GOTO [F6] or GOTO & PLAY [F3/4]

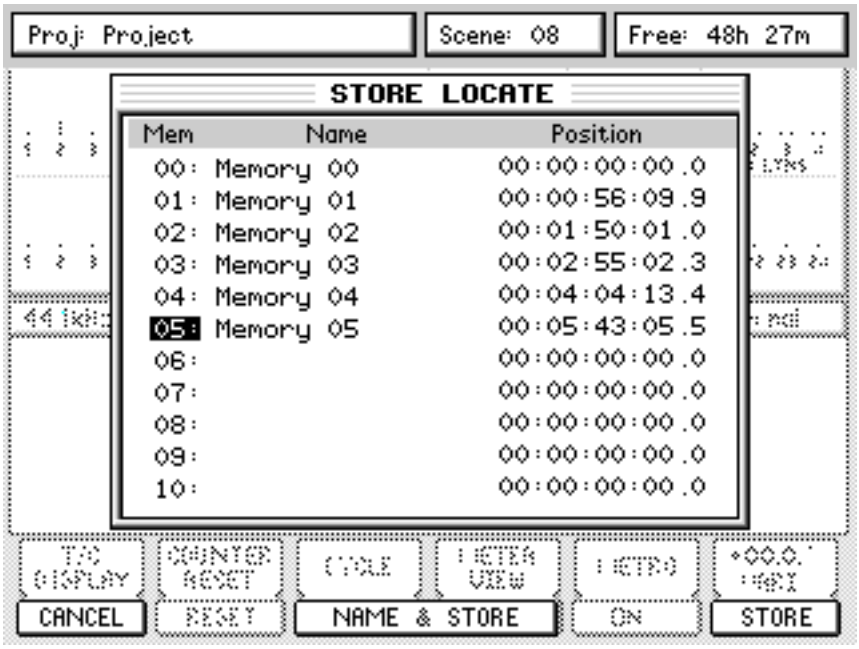
Pressing ENTER or GOTO will simply locate to the memorised point. However, pressing GOTO+PLAY (F3/4) will locate to the selected memory and will automatically put the DPS24 into play.

Whichever key you press to locate, the prompt closes when you press it.

You can also locate to a specific timecode position by pressing SHIFT+GOTO. This will pop up a prompt where you can enter the timecode value using the numeric keypad:



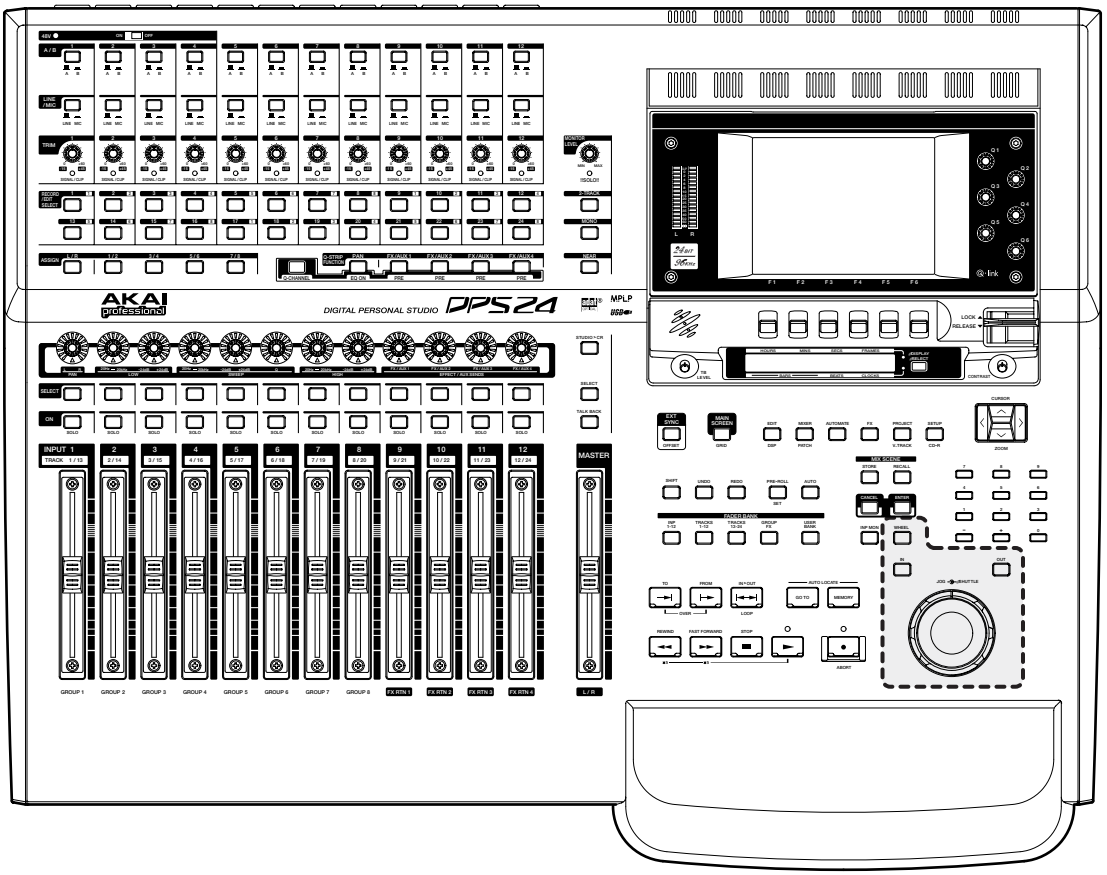
To store a locate memory, press the MEMORY key followed by a two-digit number followed by ENTER. This will store the current NOW time into the selected locate memory. However, when you press MEMORY, this pop-up is shown:



Using this list, you can use the CURSOR UP/DOWN keys to select a locate memory to store. You may also name the locate point by pressing F3/4. Once stored, they may be recalled using the GOTO key described on the previous page. Storing the locate memory also closes the prompt.

JOG/SHUTTLE WHEEL

The DPS24 features a combined JOG/SHUTTLE wheel:



The outer ‘shuttle’ wheel allows variable speed playback forward or backward at 2 x nominal speed whilst the inner jog wheel allows you to ‘reel-rock’ or ‘scrub’ audio. It is possible to scrub all 24 tracks.

> ➳**NOTE :** *When shuttling or jogging, any automation data is ignored. When forward playback commences, however, the automation data will be played back.*

The entire wheel mechanism can be switched off using the WHEEL key located above the IN key to prevent accidental use during critical playback (for example, when doing the final mixdown). When WHEEL is switched ON, however, you can grab the jog wheel at any time during playback to scrub audio and identify edit points, locate points, etc.

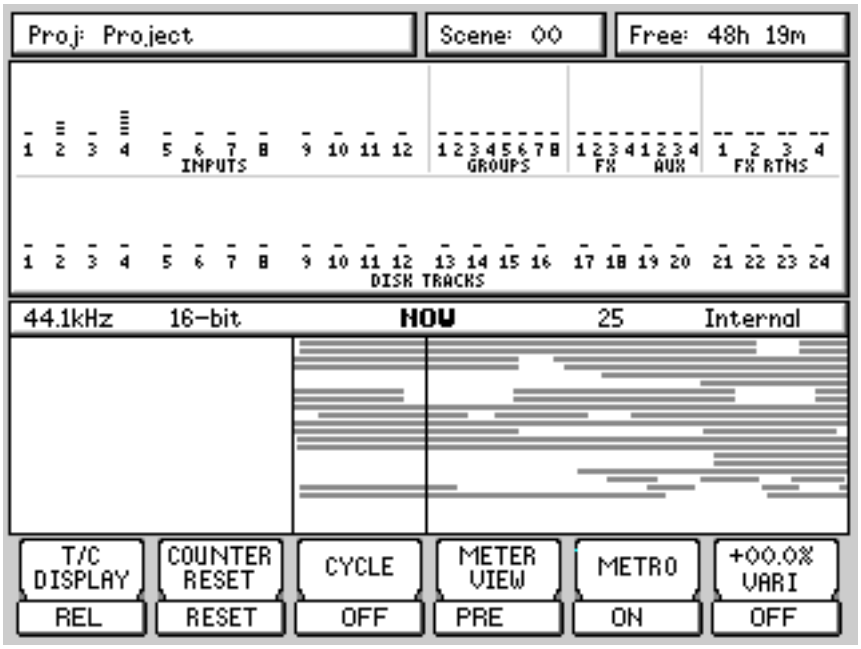
IN/OUT KEYS

Pressing either of these keys marks the current NOW time as the IN or OUT points. IN and OUT points can be marked ‘on-the-fly’ even when a project is playing - there is no need to have to stop playback to mark an edit point or create an edit region. When an IN/OUT region is marked, it is highlighted on the track display of the LCD.

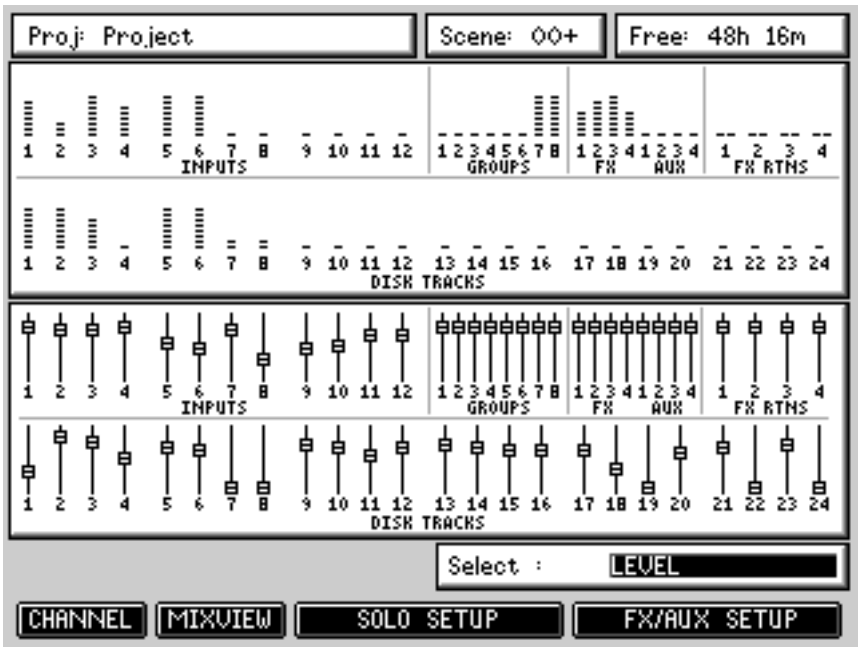
> ➳**NOTE :** *Although it is possible to place the OUT time before the IN time, if you attempt any kind of audio edit or offline DSP process, you will be prompted that it is an invalid edit region. In other words, when using the IN and OUT keys for editing, the IN time must always be before the OUT time.*

LCD LAYOUT

For the main 'working screens' (i.e. the MAIN SCREEN and the MIXER modes), the LCD design is quite consistent:



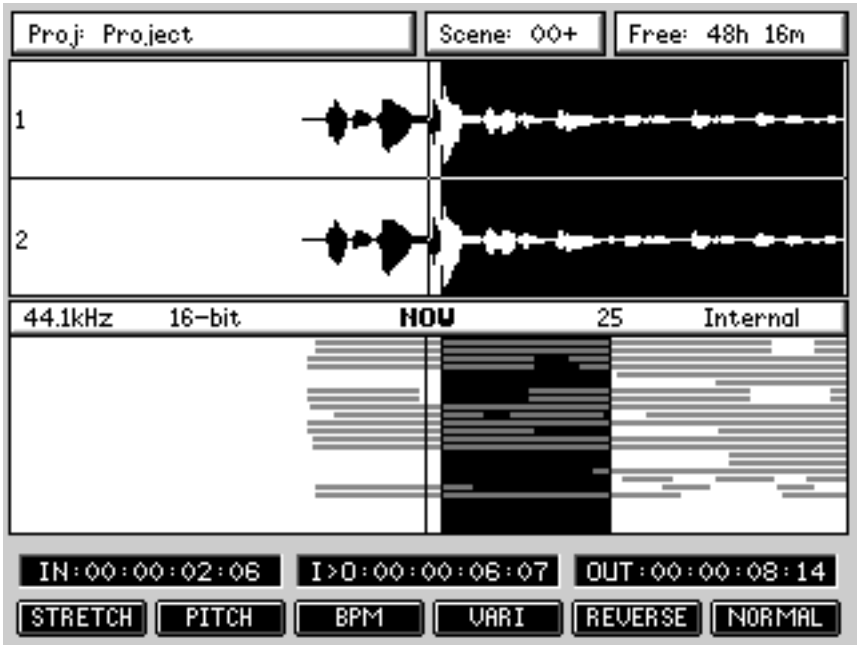
MAIN SCREEN



MIXER SCREEN

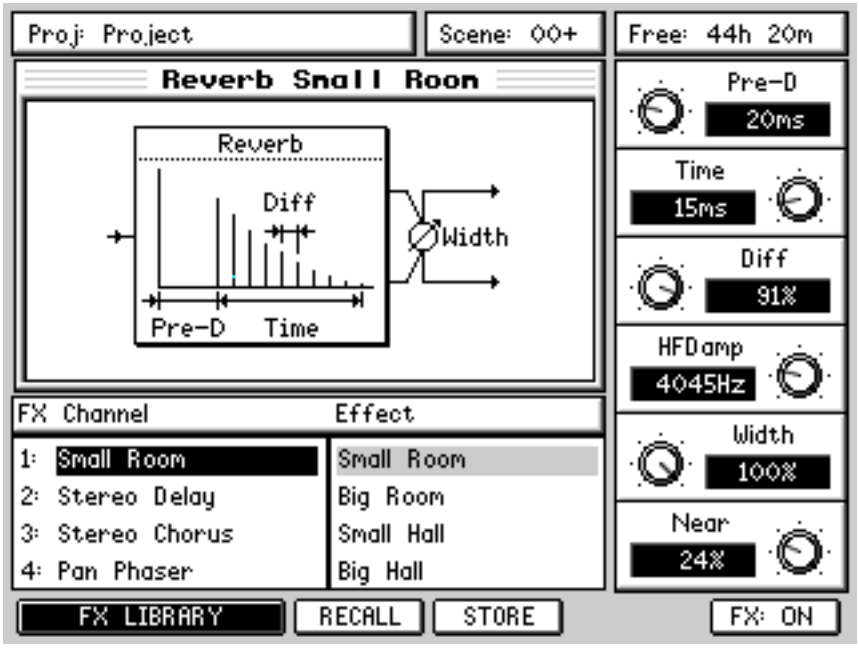
Both show the track meters in the upper half of the screen with the lower half given over to track display or mixer channel display.

Similarly, the various editing pages are consistently similar:



Here you see the track display but as metering is not so important when performing edits, the upper half of the display is used to display the waveforms of the track(s) being edited. The off-line DSP editing pages are almost identical to the screen shown above.

Other pages are broken up into logical windows: For example, the FX pages:

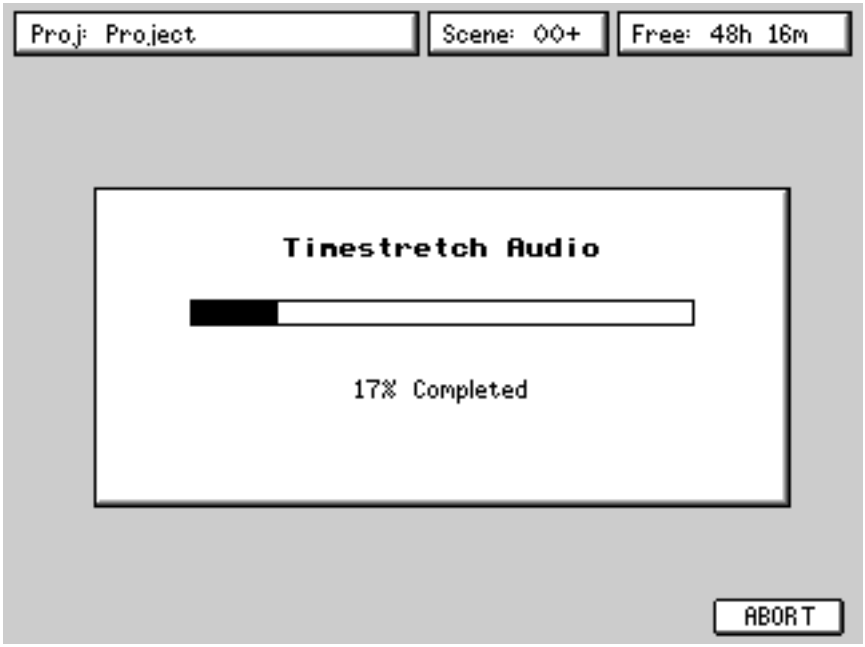


In all pages, the currently selected project is shown at the top of the page along with the currently selected mix scene and the amount free on disk.

PROMPTS

The DPS24 uses prompts to guide you through certain function of the user interface. For example:

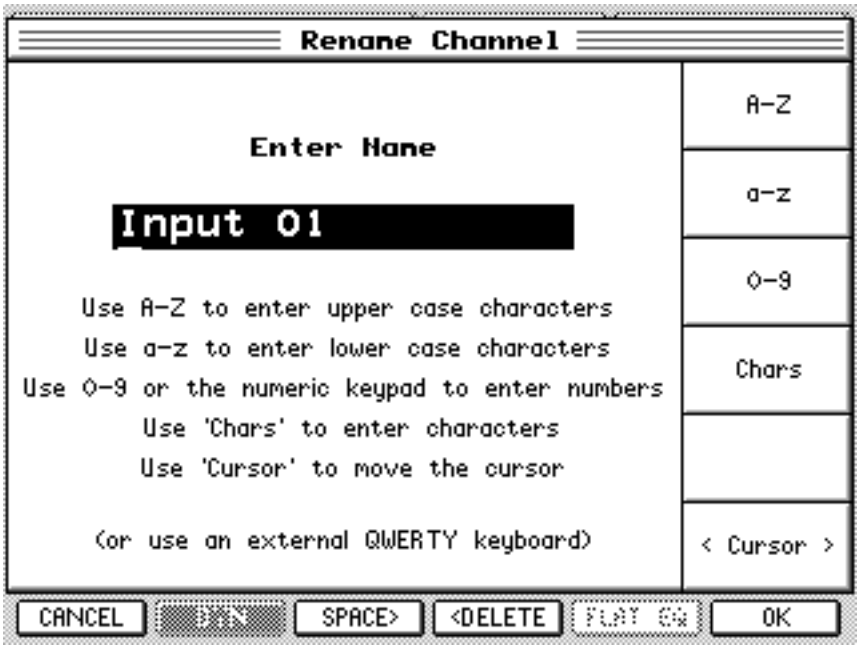
The DPS24 also uses progress displays for functions that take time. For example:



NAMING

It is possible to name things on the DPS24 from the front panel. However, we thoroughly recommend that you connect a PS2 keyboard as this makes naming MUCH easier and suitable keyboards for the purpose can be bought very cheaply at any high street store that sells computers.

When you go to name something, you will see this pop-up:



You can use Q1 to set upper case characters A-Z.

You can use Q2 to set lower case characters a-z.

You can use Q3 (or the numeric keypad) to enter numbers 0-9.

You can use Q4 to enter special characters !@£$%&(), etc.

You can use Q6 to move the cursor left/right.

You can use F3 to insert spaces.

You can use F4 to backspace/delete.

Whilst is perfectly feasible to enter names in this way, we are the first to admit that it is nowhere near as convenient as using an external keyboard.

SOFT KEYS

There are a few types of soft keys along the bottom of the LCD:

COPY	This is typical ‘do it’ style key.
MIXVIEW	This is a typical ‘go-to-another-page’ key.
SET CLOCK	This is double width ‘do it’ key.

This is a double width ‘go to’ key.

Some soft keys are also uses as ON/OFF switches:

Indicates that a function is on.

Indicates that a function is off.

Double width equivalents also exist:

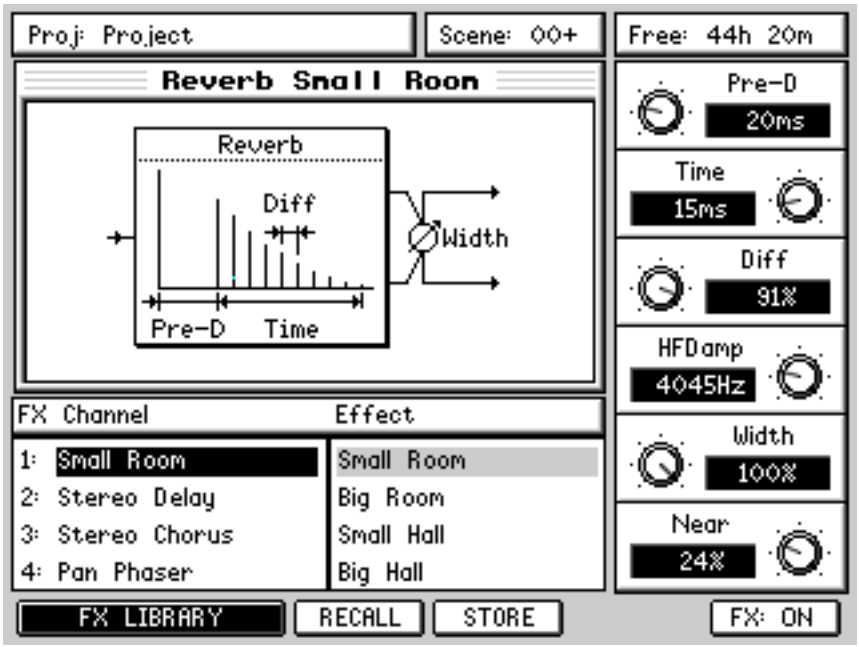
ILLUMINATED KEYS

Illuminated keys will light when selected as you would expect.

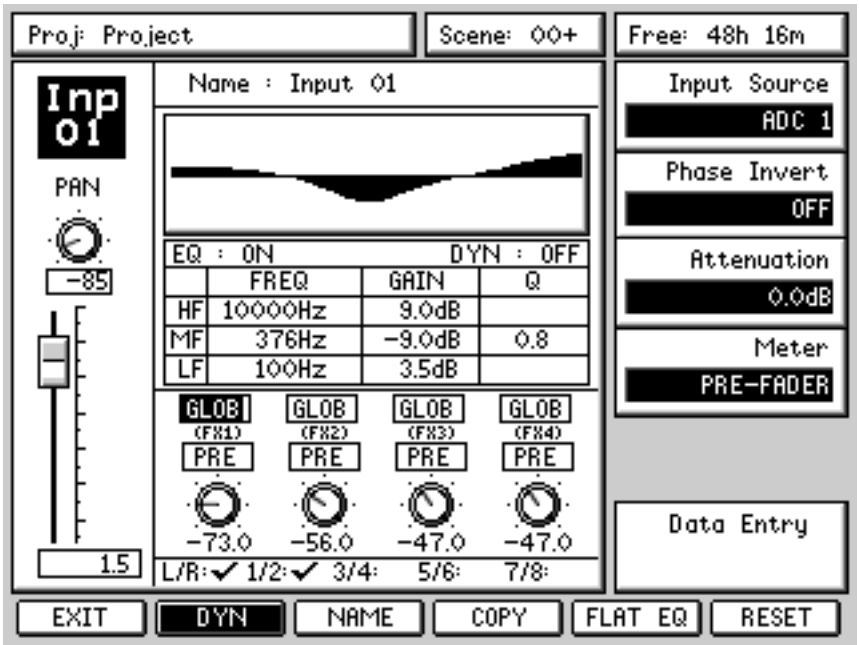
However, some of these keys have SHIFT functions (for example, SHIFT+EDIT = DSP). When selected, these keys flash to indicate that they are in their ‘shifted’ status.

MOVING AROUND THE LCD

Most pages provide immediate access to parameters via the Q-LINK controls on the right. An example of this would be the FX pages:



Here, you simply select the FX channel and the FX type with the cursor keys and set the parameters directly with the Q-LINK controls. Most of the DPS24's are like this and have no parameters to set via tedious cursor movement. There are a few pages, however, which have multiple parameters to select. One example is the CHANNEL page:



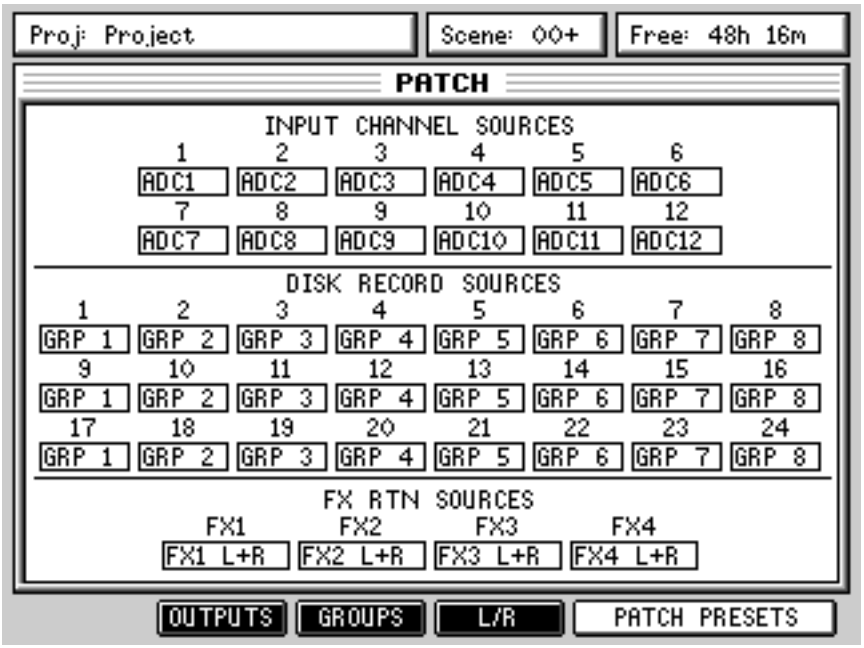
In a page such as this, you use the CURSOR keys to move around from parameter field to parameter field.

To edit the value you can.....

- Enter a number directly using the numeric keypad
- Use the numeric keypad's +/- keys to nudge values
- Use the Q6 as a typical DATA ENTRY encoder

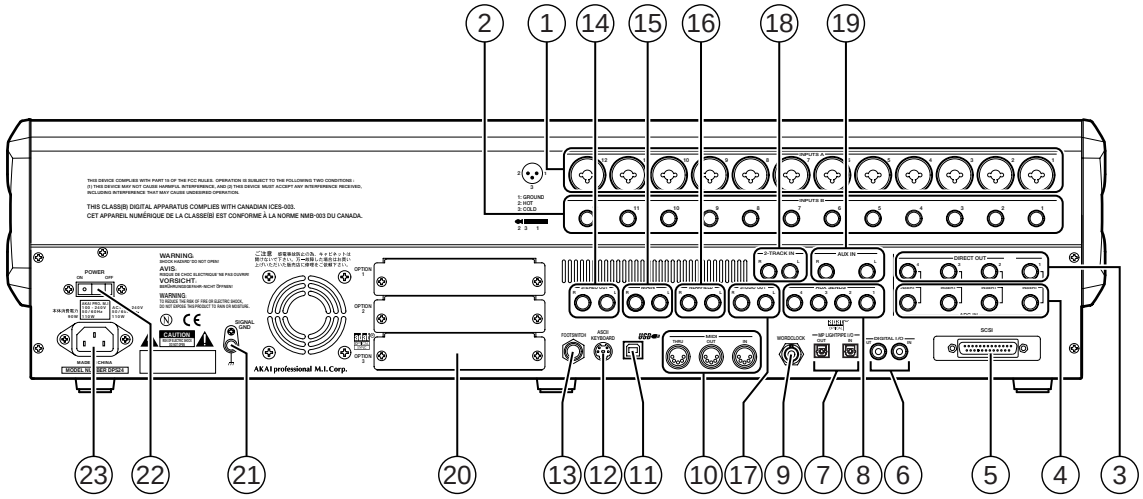
In this example, however, you would probably prefer to use the Q-CHANNEL function to set the functions shown.

Some pages, however, have quite a lot of fields and unfortunately, there is no option but to cursor around them and use the numeric keypad's DATA +/- keys to set values. An example of this would be the PATCH pages:


Proj: Project
Scene: 00+
Free: 48h 16m
PATCH
INPUT CHANNEL SOURCES
1 2 3 4 5 6
ADC1 ADC2 ADC3 ADC4 ADC5 ADC6
7 8 9 10 11 12
ADC7 ADC8 ADC9 ADC10 ADC11 ADC12
DISK RECORD SOURCES
1 2 3 4 5 6 7 8
GRP 1 GRP 2 GRP 3 GRP 4 GRP 5 GRP 6 GRP 7 GRP 8
9 10 11 12 13 14 15 16
GRP 1 GRP 2 GRP 3 GRP 4 GRP 5 GRP 6 GRP 7 GRP 8
17 18 19 20 21 22 23 24
GRP 1 GRP 2 GRP 3 GRP 4 GRP 5 GRP 6 GRP 7 GRP 8
FX RTN SOURCES
FX1 FX2 FX3 FX4
FX1 L+R FX2 L+R FX3 L+R FX4 L+R
OUTPUTS
GROUPS
L/R
PATCH PRESETS

However, there are not that many pages like this and also, these are the kind of pages which, once set, do not require constant usage after that. For the most part, parameters are set using dedicated controls in the form of either the Q-LINK controls, the Q-STRIP/CHANNEL encoders of dedicated control surface switches.

REAR PANEL



The rear panel has a comprehensive selection of connectors to interface the DPS24 with a wide range of analogue and digital equipment. These are:

① **INPUTS - BANK A**
Across the top of the rear panel are the two banks of analogue inputs. The top row (Bank A) are balanced inputs on XLR/TRS jack combos. These can accommodate XLR connectors or TRS (tip: Hot, ring: Cold, sleeve: Gnd) 1/4" jack plugs.

② **INPUTS - BANK B**
The second row of inputs (Bank B) are TRS jacks that can accommodate balanced inputs.

Banks A and B are switched from the front using the switches across the top of the panel

③ **CHANNEL INSERT SENDS/DIRECT OUT**
④ **CHANNEL INSERT RETURNS/ADC INPUTS**
Inputs 1-4 also feature balanced insert points allowing you to patch in professional external processors such as noise gates, compressors, etc. Although each channel of the DPS24 has a compressor/gate, you may want to use external valve units or other devices.

The channel insert sends (3) can also be used as balanced direct outputs and the channel insert returns (4) can also be used to accept external pre-amps or 19" 'channel strips' therefore bypassing the internal pre-amps on the DPS24 for these channels.

⑤ **SCSI CONNECTOR OPTION**
The optional SCSI connector may be installed here allowing you to connect external SCSI drives to the DPS24.

⑥ **DIGITAL I/O**
These RCA phono connectors offer SPDIF digital audio input and output. The input is freely assignable to channels within the DPS24 and the output can accept a wide variety of internal audio sources (the default is the master stereo L/R output).

⑦ **MULTI-PURPOSE LIGHT PIPE I/O**
These optical connectors are configured to carry 8-channel ADAT™ digital input/output.

⑧ **AUXILLIARY SENDS 1-4**
AUX SENDS 1-4 default to being output here for use with external effects processors. However, it is possible to patch other audio sources to appear at these outputs if you wish.

⑨ **WORDCLOCK I/O**
When wordclock is selected as the sync source, this BNC is set to receive wordclock. At all other times, this BNC is set to generate wordclock.

⑩ **MIDI IN/OUT/THRU**
The MIDI IN connection can accept MIDI Time Code and MIDI clock for synchronising to external equipment such as sequencers.

The MIDI OUT connector can generate MIDI Time Code so that sequencers, etc., may be synchronised to the DPS24. The MIDI OUT can also generate MIDI events such as volume and pan allowing the DPS24 to control (mix) external equipment (for example, samples, sound modules, etc.).

The MIDI THRU connection passes MIDI data received at the MIDI Input.

⑪ **USB CONNECTOR**
This is provided for future expansion.

⑫ **PS2 KEYBOARD CONNECTOR**
You may attach a PS2 keyboard here to assist with naming items in the DPS24.

⑬ **FOOTSWITCH INPUT**
This 1/4" jack socket can accept a footswitch for hands-free recording and playback of the DPS24. This input can also accept an Alesis LRC™ remote controller allowing simple remote control (when overdubbing vocals in a separate studio area or vocal booth, for example).

⑭ **MASTER STEREO OUTPUT**
These balanced outputs should be connected to the line inputs of your stereo mastering machine.

⑮ **MAIN MONITOR OUTPUT**
These balanced outputs should be connected to the line inputs of your main control room monitor amplifier or powered speakers.

⑯ **NEARFIELD MONITOR OUTPUT**
These balanced outputs should be connected to the line inputs of a smaller monitoring system powering smaller speakers. You may switch between the MAIN and NEARFIELD monitoring systems using the NEAR switch in the monitoring section of the DPS24's control surface.

⑰ **STUDIO FOLDBACK OUTPUTS**
These outputs should be connected to a separate monitoring system (typically an amplified headphone monitoring system) located in a separate studio recording area, vocal booth, etc. The audio feed to these outputs is derived via AUX 3/4 allowing an independent mix to be sent to these outputs when track laying and overdubbing.

> ➳ ***NOTE :*** *When either of the STUDIO OUTPUTS are enabled, the respective AUX output (3 and/or 4) is disabled.*

⑱ **2-TRACK INPUT**
You should connect the outputs of your stereo mastering machine to these RCA phonos. You can monitor this input using the 2-TRACK switch found in the monitoring section of the DPS24's control surface.

⑲ **AUX IN**
This is a balanced stereo input that can be used for a variety of purposes. It can be used to bring in an external submixer (for example, to expand the number of input channels for sound modules, samplers, drum machines, etc., that may be being sequenced during mixdown) or it can be used as a stereo effects return. By default, this signal feeds the stereo L/R bus via the stereo AUX mixer channel prior to the master stereo fader. However, the AUX INPUTS can be freely patched within the DPS24 and used as a record source if you wish.

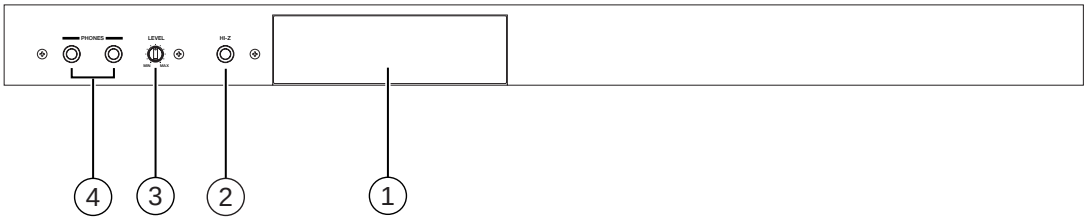
⑳ **EXPANSION SLOTS**
These slots can be used to accept a variety of optional expansion cards.

㉑ **GROUND TERMINAL**
Connect this to some earthed metalwork if you experience any mains hum or interference as it may help reduce it.

㉒ **POWER SWITCH**
This is used to switch the DPS24 on and off.

㉓ **POWER CONNECTOR**
This should be attached to a suitable cable connected to a mains power source.

FRONT PANEL



① **CD-RW/CD-R DRIVE**
An optional IDE CD-RW or CD-R drive may be installed here.

② **HI-Z GUITAR INPUT**
An electric guitar (or bass guitar) may be DI'd into this high impedance input. Note that when this input is used, it uses Input Channel 12 and Inputs 12A and 12B on the rear panel are overridden and cannot be used.

③ **HEADPHONE LEVEL**
This allows control of the level of the signal appearing at the headphone outputs.

④ **HEADPHONE OUTPUT**
Two headphone output connectors are provided. Both are identical (i.e. wired in parallel) and carry a duplicate of the MONOTOR output.

POWERING UP THE DPS24

Ensuring that your monitor amplifier's master level control is turned down, switch the DPS24 on using the rear panel POWER switch. You will see this screen during power up:

Followed shortly afterwards by this screen:

Once the disk scan has completed, you should see the icons for the installed drive(s) appear at the bottom of the screen. Typically, these will be the Internal HD and maybe a CD drive (if the option is installed).

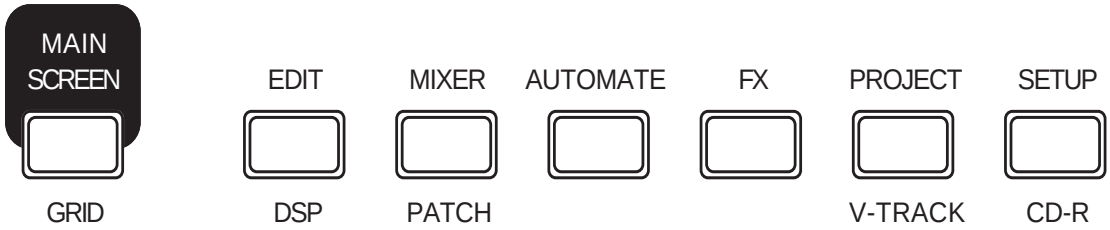
> ***NOTE :*** *If your LCD appears blank during power up, check to make sure that the LCD CONTRAST control is not set to minimum. The contrast can be turned down such that the screen can appear almost completely blank from some viewing angles.*

If your DPS24 does not power up as described above - for example, you get an error message saying "NO DRIVES DETECTED" or your CD drive (if installed) doesn't show up at the bottom of the screen or whatever - you should contact your AKAI professional dealer or technical support immediately.

Assuming your DPS24 does power up properly, you should press MAIN SCREEN (or whichever mode you wish to use).

DPS24 MODES

Running below the LCD are the DPS24's 'mode' keys:



These are:

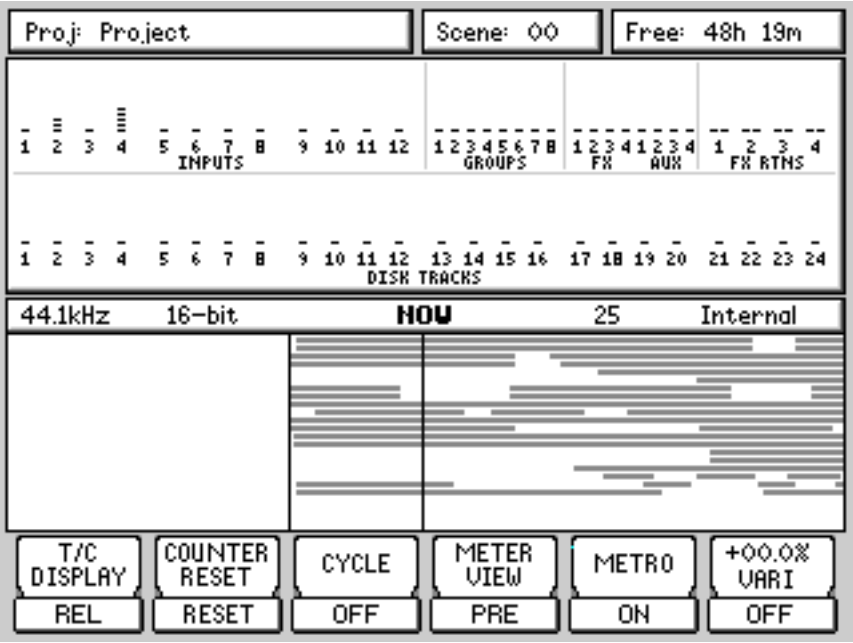
MAIN SCREEN	This is the main operating screen that one normally works in. It shows the project name, meters and an overview of the project. Its SHIFT function shows an enlarged project display.
EDIT	Allows you to edit audio with functions such as copy, cut, paste, etc. This mode's shift function gives access to the DPS24's off-line DSP functions such as timestretch, pitch shift, etc.
MIXER	Allows access to certain mixer and channel views. Its SHIFT function shows the PATCH pages where you may route signals within the DPS24 (although this can be achieved more easily from the front panel).
AUTOMATE	Allows you to set automation functions.
FX	Takes you to the effects pages where you may select and edit the DPS24's internal effects.
PROJECT	Allows you to load and create projects. Its SHIFT function gives access to the 'virtual tracks' function.
SETUP	Allows you to set global parameters such as timecode and digital sync options, etc., that affect the DPS24 as a whole. Its SHIFT function allows access to the CD-R functions for backing up to, mastering to and playing back from the (optional) CD-R.

One powerful aspect of the DPS24's operation is that you do not have to stop playback (or whatever else you may be doing) to access the different modes or other functions on the unit. Thus, you can be recording and perhaps during record, switch to AUTOMATION mode to set some automation parameters up in advance. You could be playing back and switch to EDIT mode to start editing tracks. Similarly, you can be playing back and enable the Q-Channel to tweak a channel's EQ whilst at the same time, switching to the FX mode to set effects.

In other words, the DPS24's operating system need not get in the way of your creative flow forcing you to stop what you are doing in order to do something else.

MAIN SCREEN

When a project is loaded, pressing the MAIN SCREEN key will show this screen:



You can see an overview of the project plus level metering of inputs, the eight groups, the FX sends and returns and disk tracks. You may zoom in/out on the GRID overview horizontally by pressing SHIFT+ </> (you cannot zoom in vertically).

The soft keys' functions are as follows:

T/C DISPLAY — Selects ABS(olute) or REL(ative) time display in the dedicated timecode display.

COUNTER RESET — When REL timecode display is selected, you can reset it to 00:00:00:00 at any point.

CYCLE — Switches the CYCLE function on or off. When it is switched on, loop playback is possible between the IN and OUT markers.

> ***NOTE :*** *Cycle playback is not seamless and there will be a pause as the region cycles.*

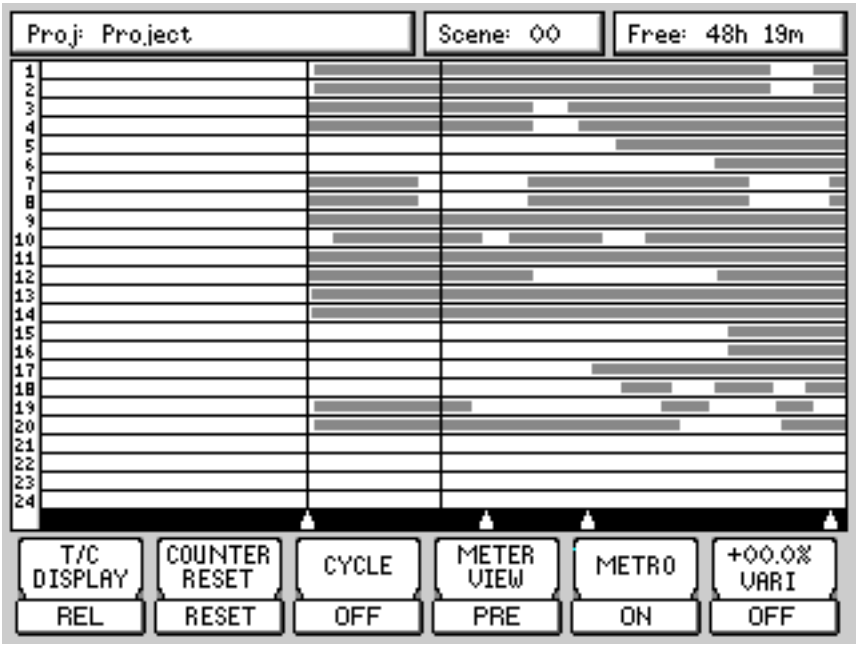
METERS — Allows you to select whether metering is pre-EQ, pre-fader or post-fader.

METRO — Switches the metronome on/off. When ON, the metronome is heard through the MONITOR OUT and HEADPHONES output. The BPM and time signature of the metronome is governed by the TEMPO MAP (see later - SETUP/TEMPO). The level of the metronome is set in SETUP/PREFS.

VARI — Switches VARISPEED on or off. You can use Q6 to the key's right to set the varispeed amount. This can be switched on or off and adjusted in real-time as the project is playing.

GRID (GRaphic Interface Display)

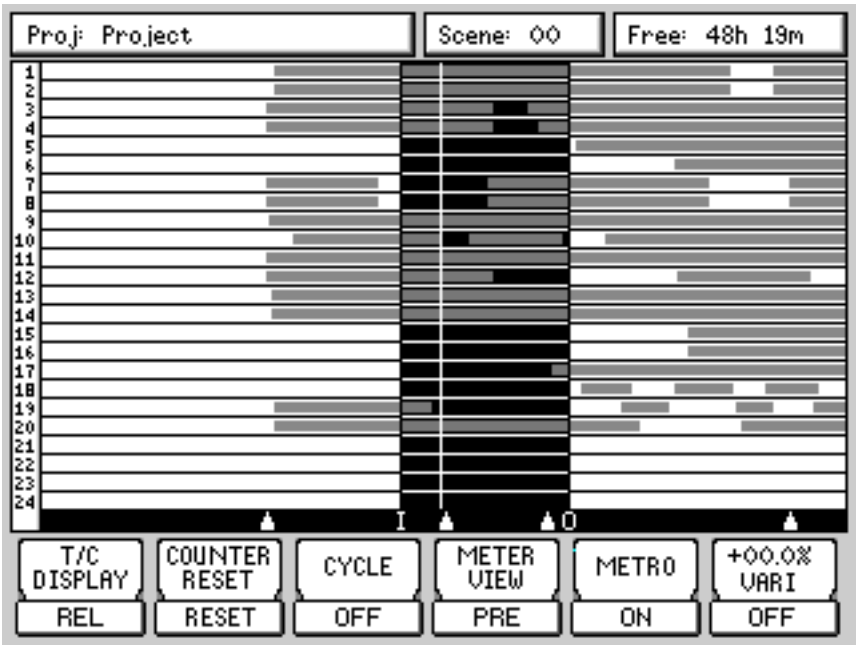
Pressing SHIFT+MAIN SCREEN shows and expanded track display:



Functionality is the same as the MAIN SCREEN except, of course, you can see the GRID more clearly. This expanded view also allows you to see autolocate points shown as white triangles across the bottom of the display and the track numbers on the left side of the GRID.

In either display, when the project is playing, the cues move across the screen from right to left.

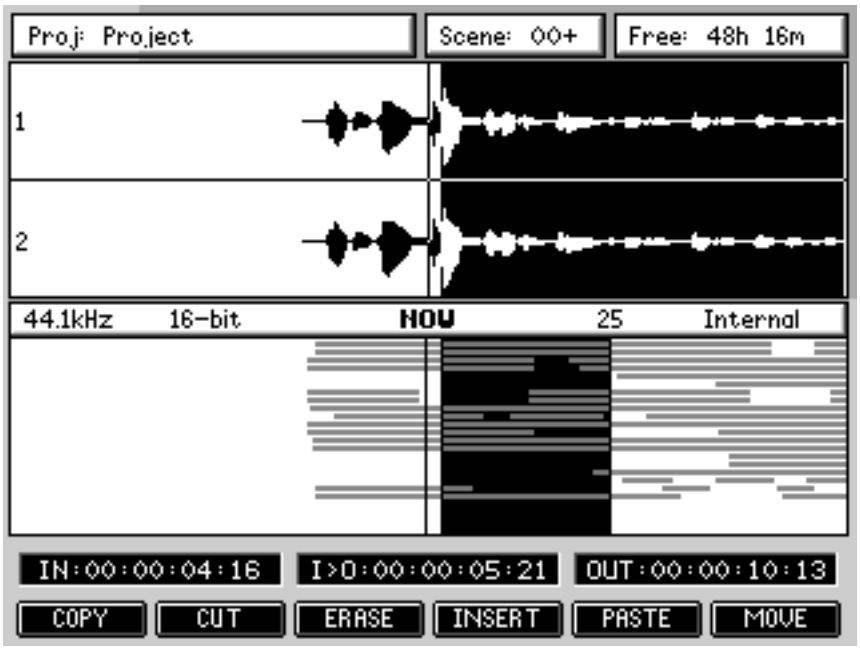
When an IN/OUT region is marked, both track displays highlight the region:



EDIT MODE

Editing on the DPS24 is simple and non-destructive. You simply mark an IN/OUT region and subject that region to editing. It is possible to edit multiple tracks. When editing, you are not altering the actual audio data - instead, you are simply changing pointers to that audio thus editing is quick as you are not physically copying/removing/moving actual audio data around. Neither are you clogging up your hard disk with duplicate audio data.

In order to edit a track, you should press EDIT and then select the track(s) you want to edit. You will see something like this screen:



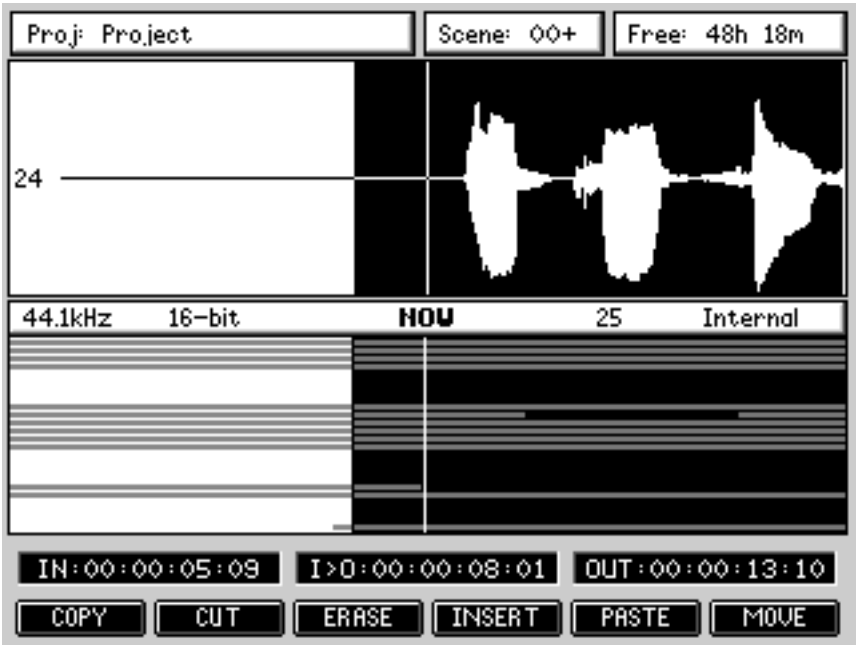
The selected track's (or tracks') waveform is shown in the upper half of the display in relation to the NOW time and you can also use the overview in the lower portion of the display to reference the edit in context with other tracks.

Also shown are the IN and OUT times and the IN>NOW length. These are shown as timecode or as Bars.Beats.Clock (B.B.C.) depending on the selection made by the DISPLAY SELECT key.

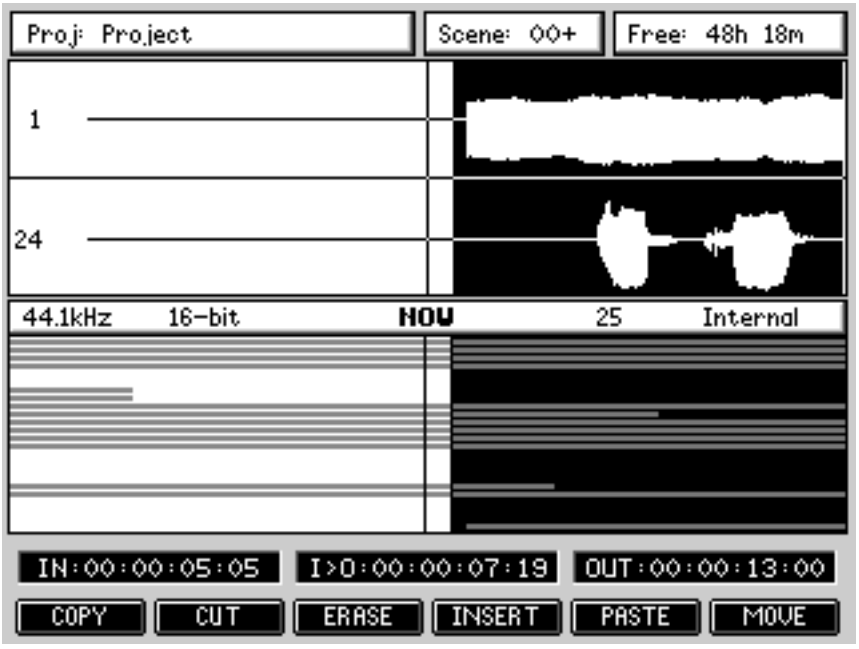
Although a maximum of two tracks of waveform display can be *shown* in the EDIT page, you can actually edit any number of tracks. Other tracks' waveforms may be viewed using the cursor up/down keys to 'scroll' through the tracks - i.e. with tracks 1 and 2 shown, pressing CURSOR DOWN would show tracks 2 and 3, pressing CURSOR DOWN again would show Tracks 3 and 4, etc.

However, you can select the tracks you want to view more directly by pressing SHIFT+EDIT SELECT. In this way, you can view any combination of two tracks (for example, tracks 7 and 12). It also allows you to edit one track but view another. For example, you may be editing Track 3 but need to use track 14 as a reference - select Track 3 for edit and use SHIFT+EDIT TRACK 3 and 14 to view the two tracks on the LCD.

When you press SHIFT and an EDIT SELECT track key, one track is shown:

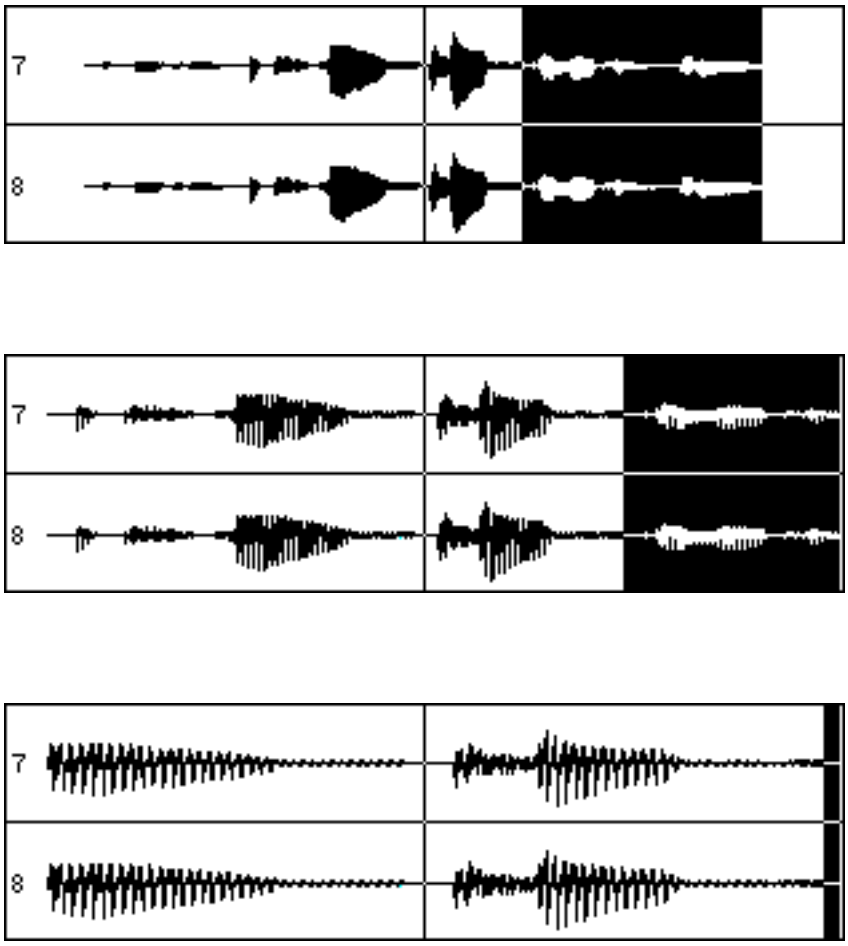


If you press SHIFT and another EDIT SELECT track key, two tracks will be shown:



When editing, you can use the JOG wheel to fine tune your edit - jog to the point in the waveform display and press IN (or OUT) to re-define the edit region.

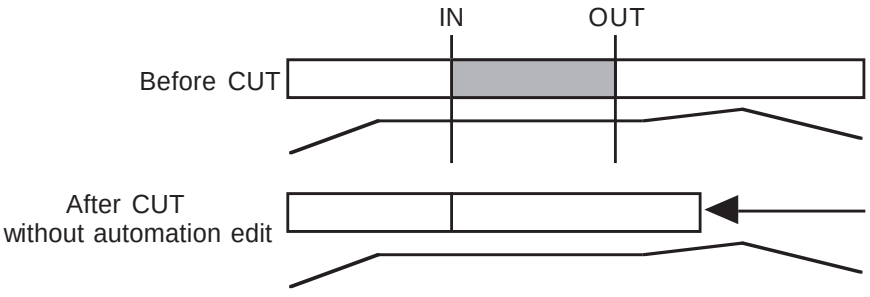
Using SHIFT+CURSOR </>, you may zoom in/out on the waveform horizontally:



You can also use SHIFT+CURSOR UP/DOWN to increase (or decrease) vertical (i.e. amplitude) resolution for the selected track(s).

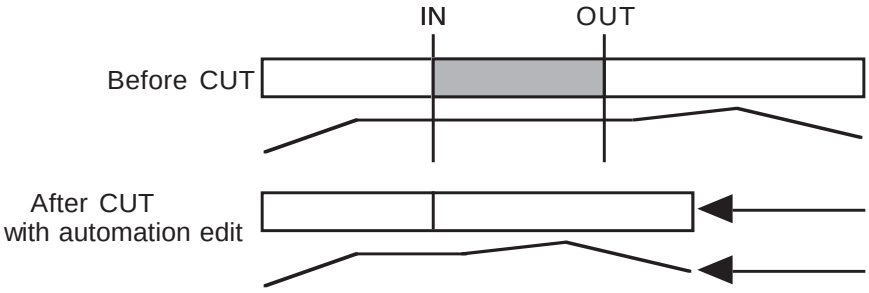
EDITING AND AUTOMATION

When performing edits that cause audio to move, it is necessary to edit any automation data that exists in that region accordingly. If automation data is left untouched by an audio edit, the mix will be wrong. For example, when removing a piece of audio:



Without including the automation data in the edit, the fade is now in the wrong place.

Editing automation data with the audio edit means that the fade is still in the correct place relative to the audio:



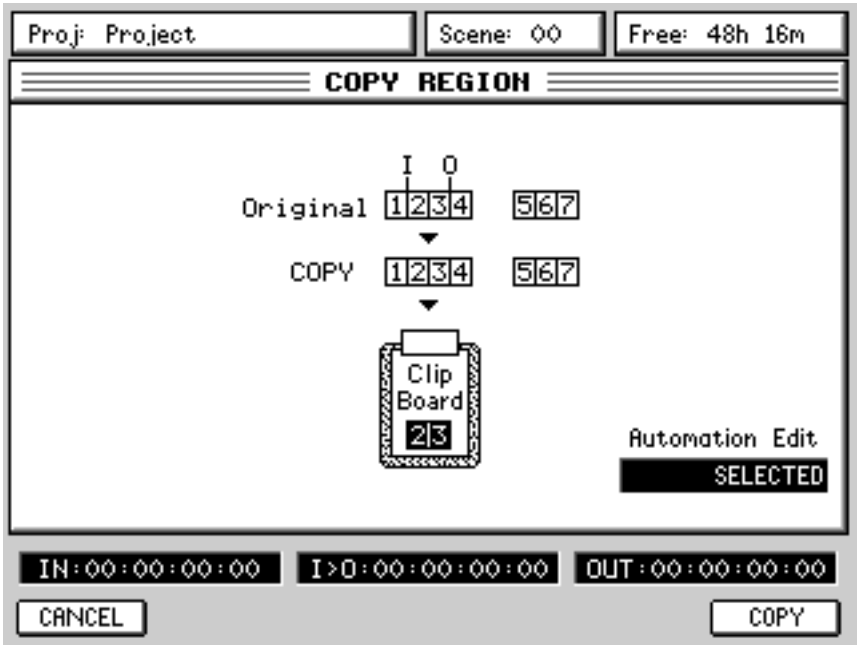
The editing functions on the DPS24 include a Q-LINK control that allows you to decide whether automation data will be affected by the edit or not. This parameter exists on all the audio edit functions allowing you to decide how the automation will be affected when editing. The options are:

OFF	Automation data will not be carried with the audio edit.
SELECTED	Automation data on the tracks selected for editing will be carried with the edit.
ALL	Automation for all channels will be carried with the audio edit. This latter option is only useful if you are doing extensive multi-track editing (for example, editing all 24-tracks where you may also want the mix of external instruments being sequenced through the Input channels to also be carried across with the edit).

➳***NOTE :*** *Care should be taken if you perform an edit with ALL selected and then attempt to paste/insert that edit with SELECTED chosen as the AUTOMATION EDIT. In this case, your automation data at the point of the insert will be potentially disrupted. If you perform an edit with ALL selected, this should only then be used with PASTE/INSERT also set to ALL.*

The edit functions are as follows:

COPY — Pressing COPY [F1] shows this prompt:



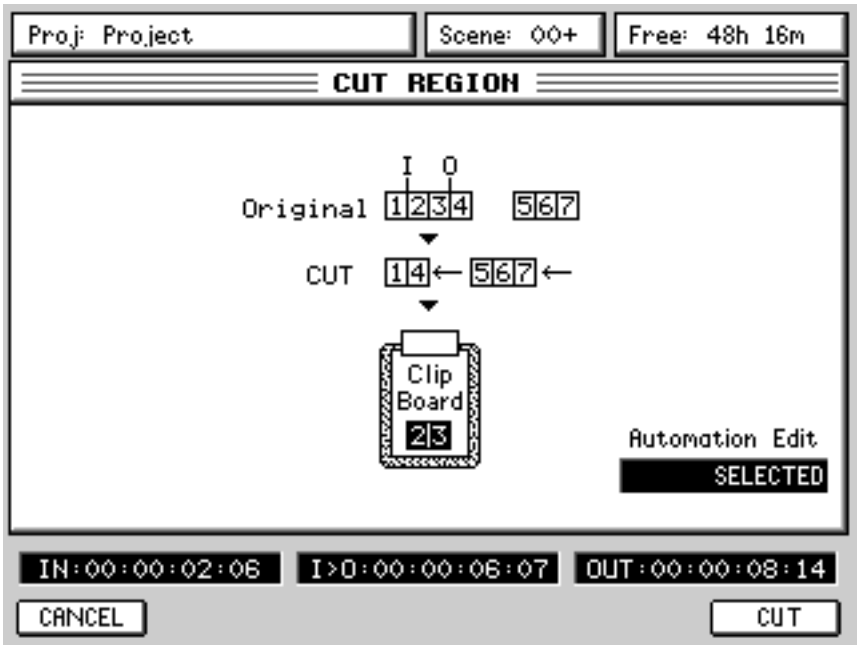
Pressing COPY [F6] will copy the region to the clipboard from where it may be subsequently pasted and/or inserted elsewhere in the project.

> ➳**NOTE :** *It is possible to copy edits between projects. Select the track(s) you want to edit, mark your edit region and press COPY. Now load the project you want to place the edit in, select the destination tracks and locate to the position you want the edit to be placed and use the PASTE or INSERT function (explained later) to place the region in that project.*
>
> *CUT and ERASE also copy the region to the clipboard so you can place audio regions you remove in other projects as well.*

AUTOMATION EDIT [Q5] allows you to also copy the automation for that region. The default is SELECTED and automation data for the selected track(s) will be carried with the audio edit.

CUT

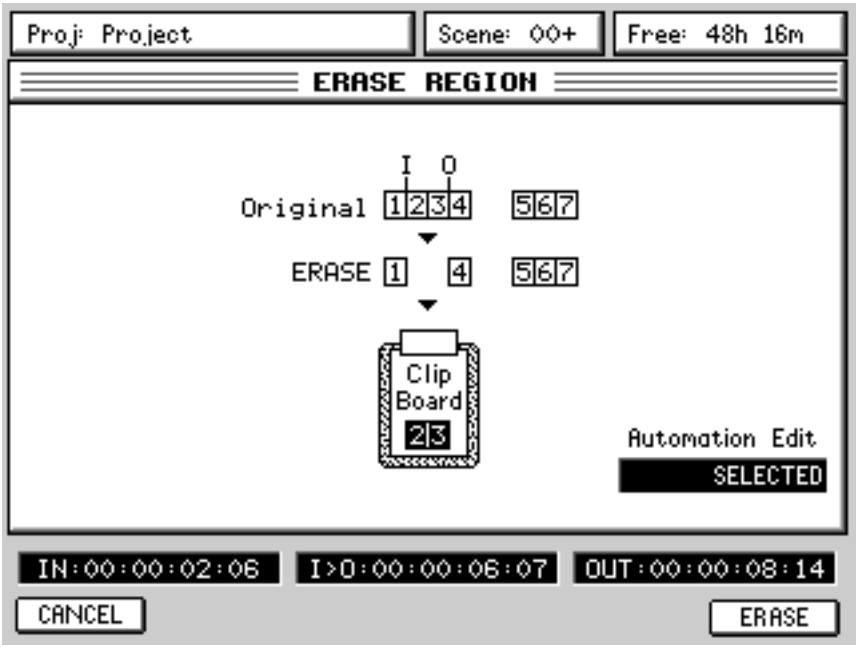
Pressing CUT will show this prompt:



Pressing CUT will remove the selected IN/OUT region to the clipboard and close the gap, shifting all subsequent audio backwards. As with all the other functions, a simple graphic depiction of the edit is shown.

ERASE

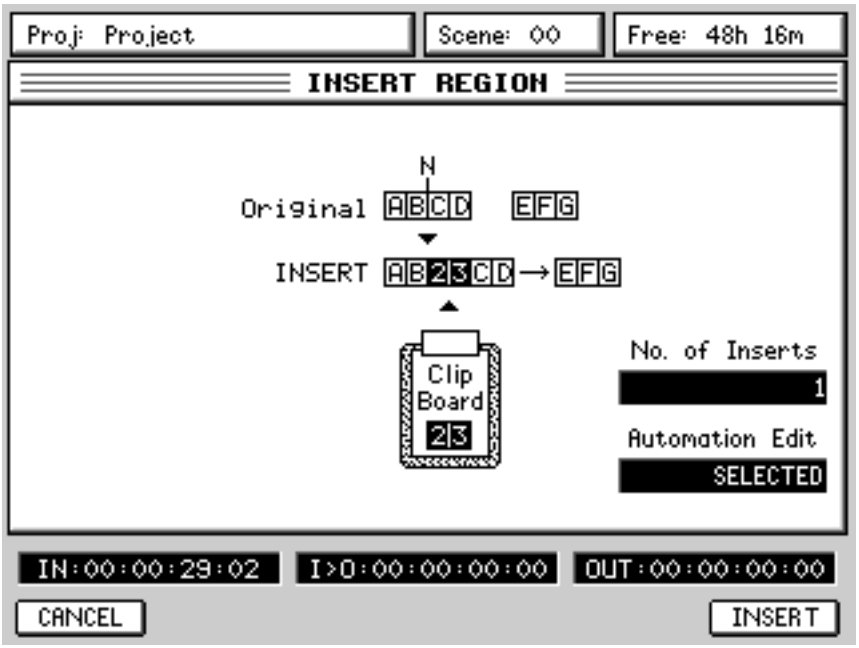
Pressing ERASE will pop-up this prompt:



Erase will remove the audio to the clipboard but subsequent audio will not slip in time.

INSERT

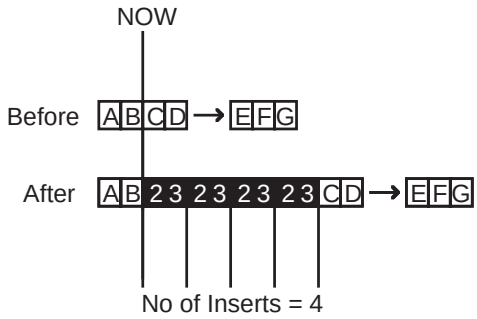
Pressing INSERT pops-up this window:



The contents of the clipboard are inserted at the NOW time and all subsequent audio is shifted in time.

You can specify the number of times the inserted cue will repeat when inserted using Q5 (up to 99). This will insert in the cue *n* times with each one appended to the end of the previous one.

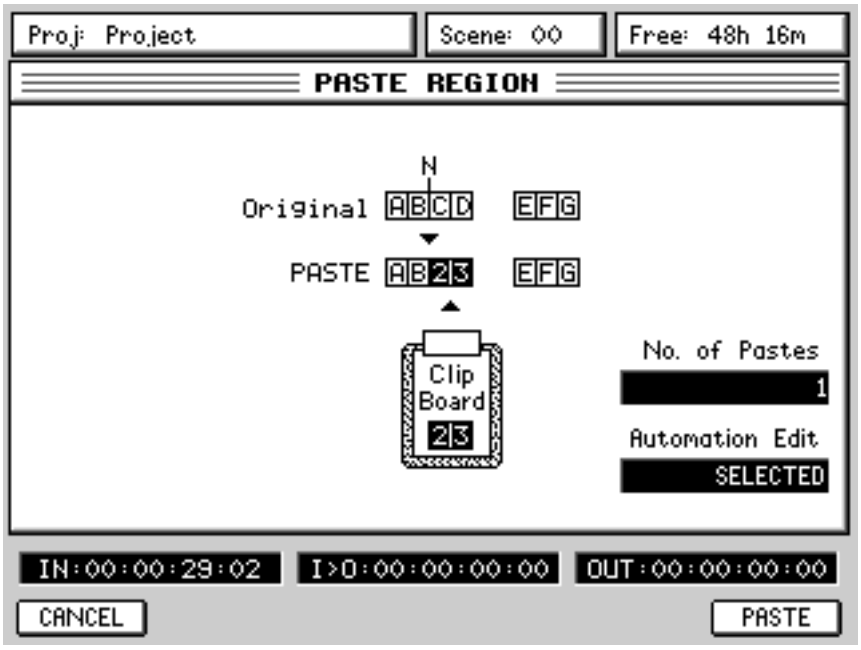
For example, with 4 repeats specified, you would get this result:



All audio after the point of insertion is shifted accordingly.

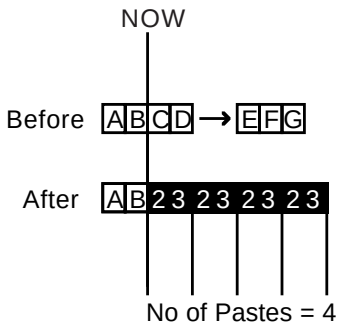
PASTE

Pressing PASTE pops-up this window:



The contents of the clipboard is pasted in at the NOW time. Please note, however, that the pasted audio will overwrite anything that exists after the NOW time. If you make a mistake, you should use UNDO.

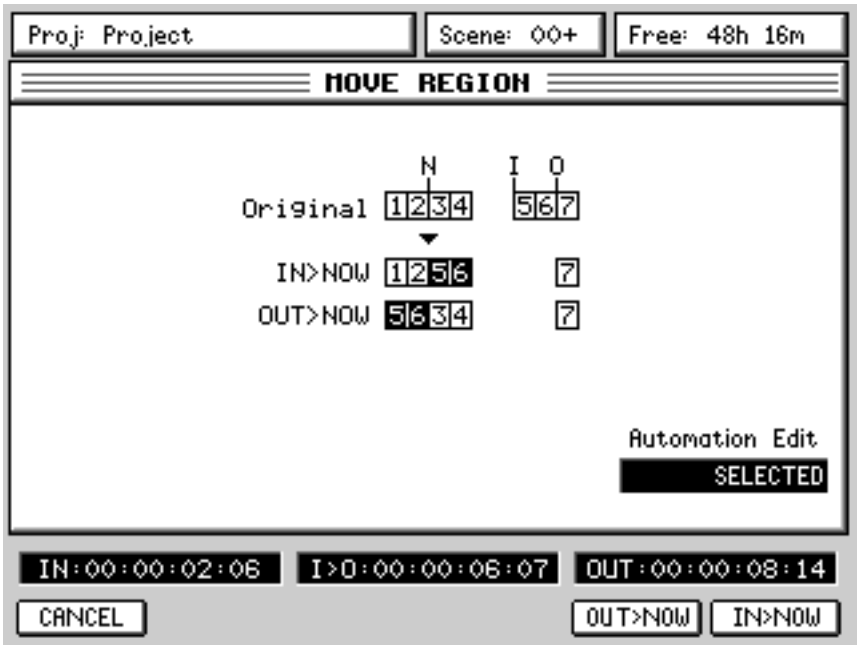
As with INSERT, using Q5, you may specify the number of times the pasted cue will be repeated (up to 99). However, the results are somewhat different:



> ***NOTE :*** *In this case, it could be that multiple repeats could paste over existing audio on the track. Please consider this when pasting with repeats. If the action tramples over audio you want to keep, don't forget that you can use UNDO!*

MOVE

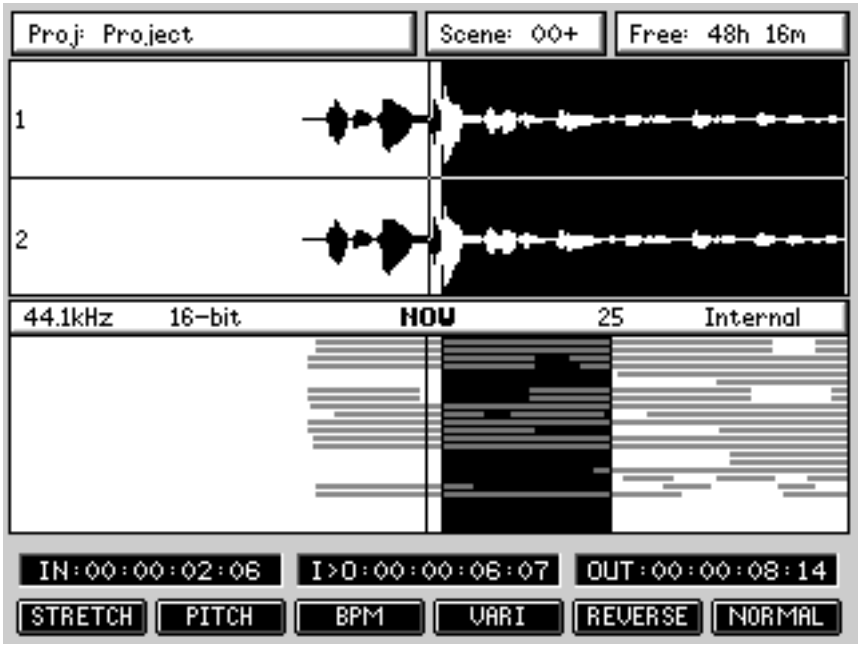
Pressing MOVE pops-up this prompt:



Here, you can slip/move the selected edit region to the NOW time referenced either to its IN point or OUT point.

DSP MODE

Pressing SHIFT+EDIT gives access to the off-line DSP functions:



As you can see, the screen layout is virtually identical to the main real-time EDIT screen.

Operation is also the same....

Jog over the point where you want the off-line edit to start and mark an IN point as appropriate. Do the same to mark the OUT point.

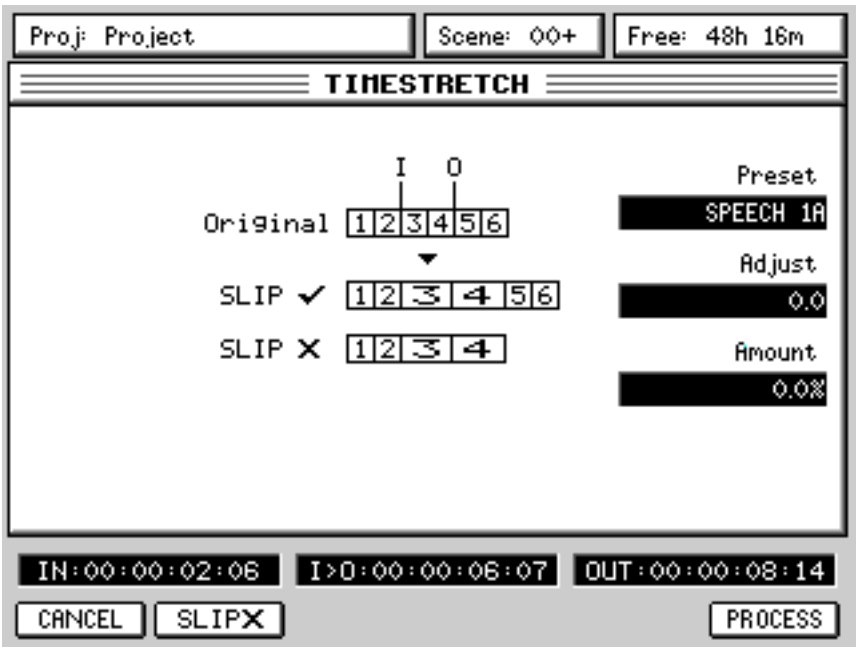
Once you are happy with the edit region you have created, you can select the DSP function you wish to apply to it. This will pop-up a window where you can set parameters appropriate to the selected DSP function using the Q-Link controls.

> ***NOTE :*** *One important difference between the two edit modes, however, is that a maximum of two tracks can be edited using the DSP functions and it is not possible to subject more than two tracks to the DSP processes.*

STRETCH

This allows you to expand/compress the length of the edit region without changing its pitch.

Pressing STRETCH pops-up this window:



Using Q2, you can select the timestretch preset. All the stretch-related DSP processes have a series of presets optimised for certain types of material. These are:

SPEECH 1 — This works well on female speech.

SPEECH 2 — This works well on male speech.

SPEECH 3 — This is more appropriate for deeper male speech.

VOCAL — This works well with solo and ensemble singing voices in isolation and, in music studio applications would be applicable for processing backing vocals and the like.

DANCE 1 — This works well with rhythmic material with little bass content or bass content that is short.

DANCE 2 — This works well with rhythmic material. HF and MF is handled well and short as are sharp bass sounds.

DANCE 3 — This is also suitable for rhythmic material but will handle longer bass components better.

PERC 1 — This works on very rhythmic material, especially solo drums, etc., but can upset bass content.

PERC 2 — This also works well on percussive material but can handle bass content better.

HI NRG — This works well processing material that is percussive, staccato and rhythmic with a wide frequency range (although sustained bass content may ‘wobble’).

BALLAD	This works well on material that has long, sustained LF content. Musically, it is effective for processing slow ballads and handles long bass notes quite well but you may occasionally experience slight 'flamming' (i.e. double triggering) with some percussive sounds.
ROCK 1, 2, 3	Suitable for processing a wide range of musical styles that have a broad band of bass and high frequency content and rhythmic elements.
SWING	This works well on material with a wide frequency range that is not too percussive.
ALLEGRO 1	This works well on orchestral music with lively dynamic strings and HF content.
ALLEGRO 2	This is optimised to handle bass content better.
ADAGIO	This is better suited to slow orchestral material with long, sustained notes.

Each preset has three variations A, B and C. The A variations make a more general analysis of the original sound and although they process the selected region more quickly, the end result may not be as accurate as using either the B or C variations which make a more detailed analysis of the original material (but take slightly longer to process).

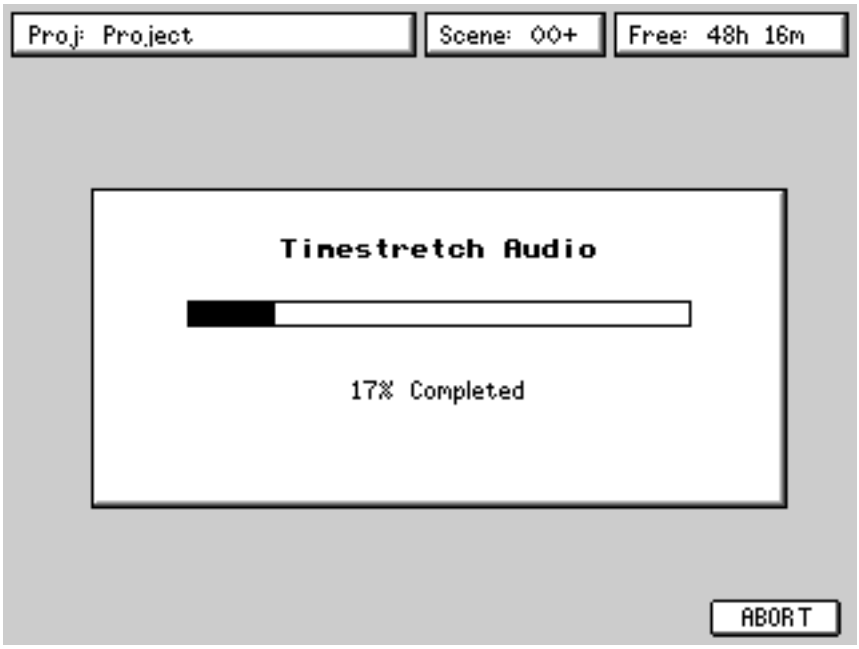
Q2 - ADJUST - provides access to the key parameters in any one preset and allows you to make adjustments to the preset with one, easy to use control.

Q3 - AMOUNT - allows you set the timestretch amount as a percentage with a range of 50% - 200% (100% is 'absolute' and represents no change).

F2 [SLIP on/off] allows you to select whether audio after the timestretch region will slip in time or not. The key is a simple ON/OFF switch with status being denoted by a simple ✓ (on) or ✗ (off).

Pressing PROCESS will initiate the process. As with all the off-line DSP functions, this will process the edit region and will automatically replace the original with the new processed version. If you don't like the results, you should press UNDO.

When you press PROCESS, you see this progress display:



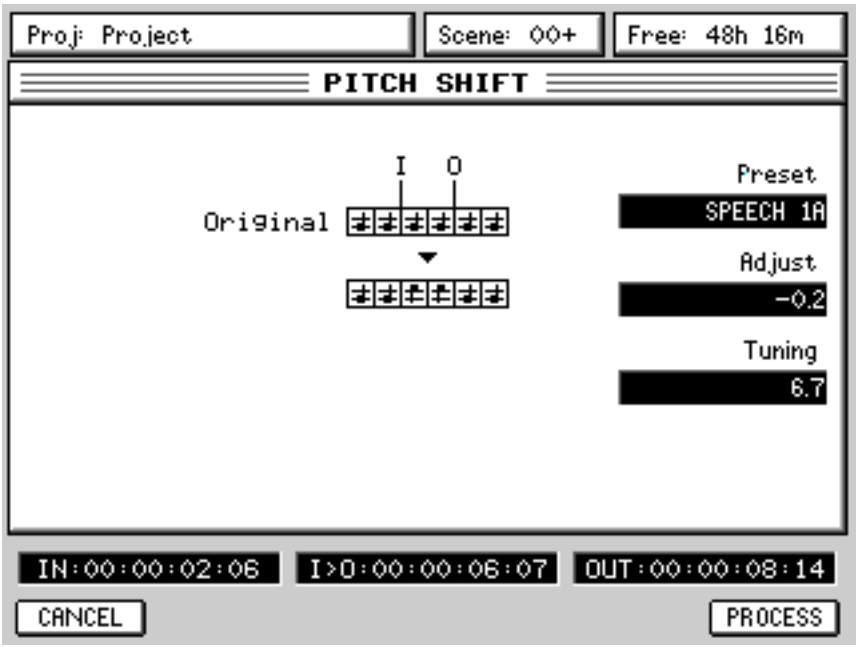
The process can be aborted at any time by pressing F6. This will leave the original untouched.

> ➳**NOTE :** *This progress display is shown for all the off-line editing processes.*

PITCH SHIFT

Allows you to change the pitch of the selected edit region without changing its length.

Pressing PITCH shows this window:



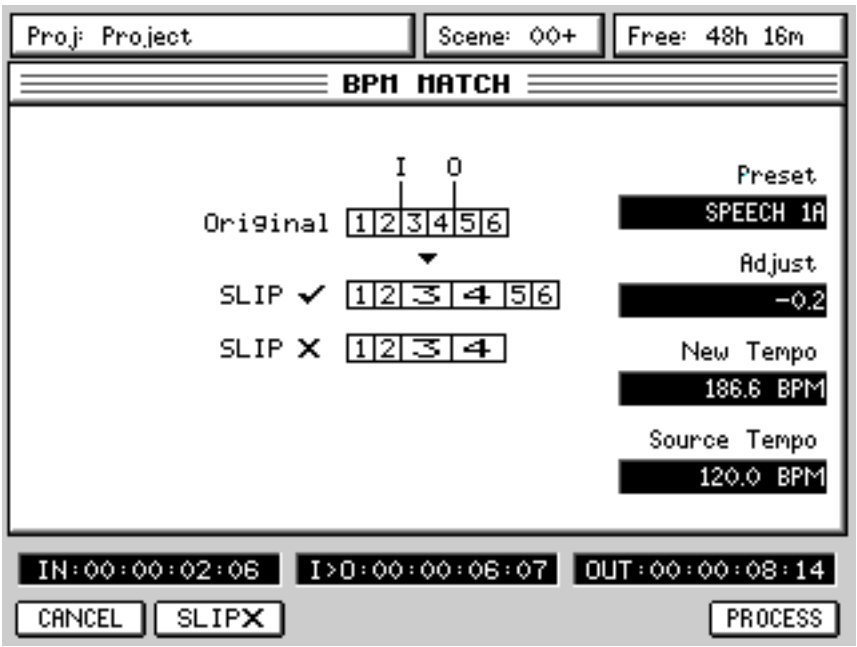
As in the TIMESTRETCH page, you may select a preset, adjust it manually and set the tuning offset you want to apply. PROCESS initiates the process.

Because the length of the processed version doesn't change, the SLIP function key does not appear.

BPM

This allows you to match the selected edit region to another tempo without changing its pitch.

Pressing TEMPO pops-up this window:



Here, you can select a preset, adjust it manually, set the tempo you want the edit region to play at referenced to the source tempo.

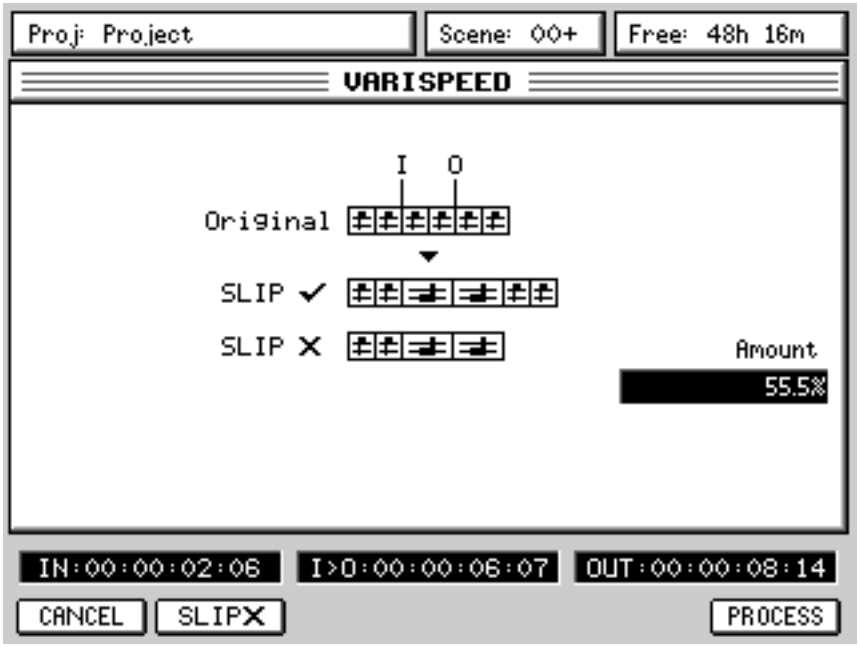
To match tempos, you need to know the tempo of the original audio. This is entered in the SOURCE TEMPO field. You then need to set the tempo you want the edit region to play at in the NEW TEMPO field. You can commit the process by pressing PROCESS.

F2 [SLIP] allows you to select whether audio after the tempo-matched region will slip in time to accommodate the new length.

VARI-SPEED

Allows you speed up/down the selected edit region. The audio will change pitch and length as though speeding up or slowing down a reel-to-reel tape machine.

Pressing VARI will pop-up this window:



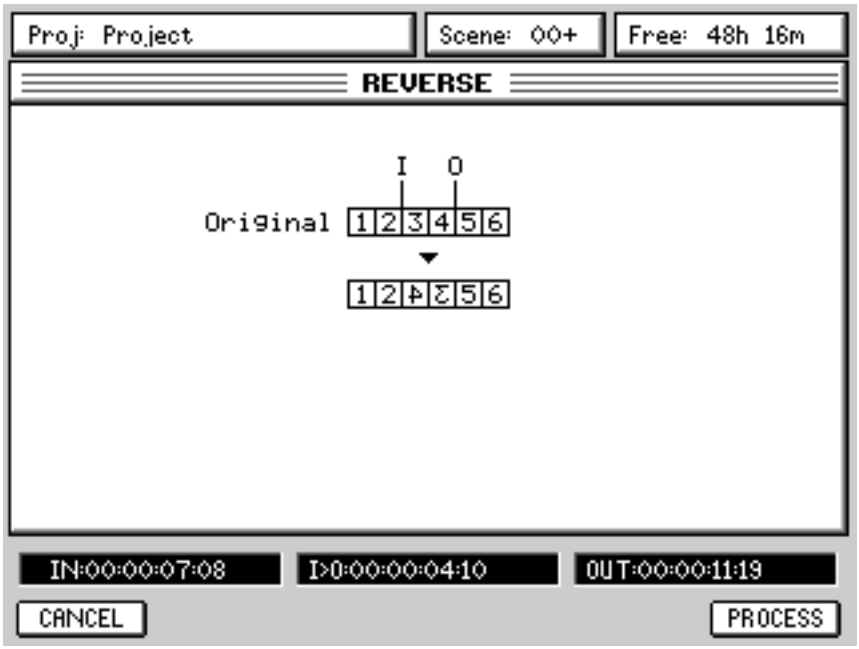
You can adjust the amount of varispeed using Q4. Press PROCESS to commit the process.

F2 [SLIP] allows you to select whether audio after the processed region will slip in time to accommodate the varispeed.

REVERSE

Allows you to reverse the selected edit region so that it plays backwards.

Pressing REVERSE pops-up this window:



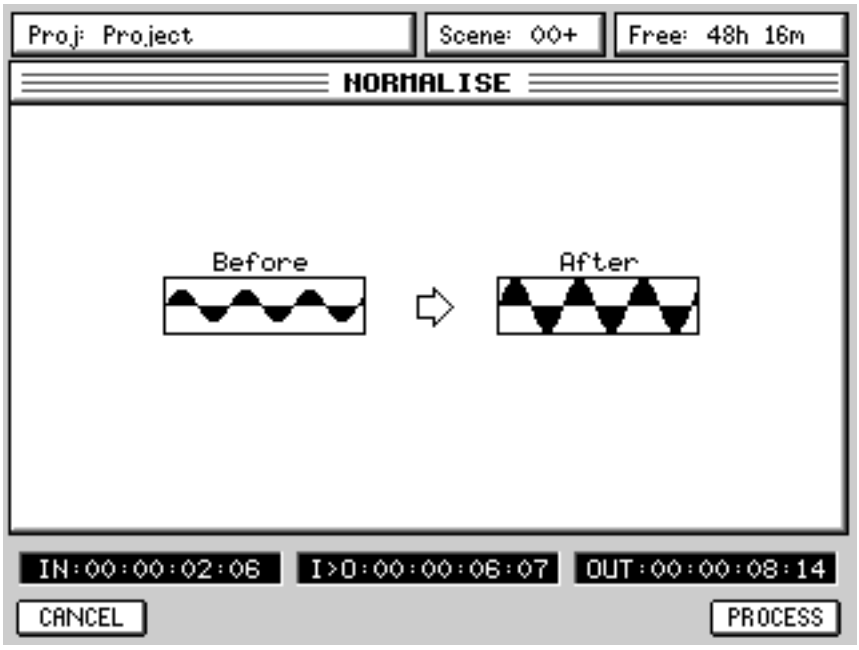
There are no parameters to adjust for this function.

Because the length of the processed version doesn't change, the SLIP function is not shown.

NORMALISE

Allows you to normalise the selected edit region. The signal is analysed for its peak level and the edit region is then increased proportionally to obtain maximum level.

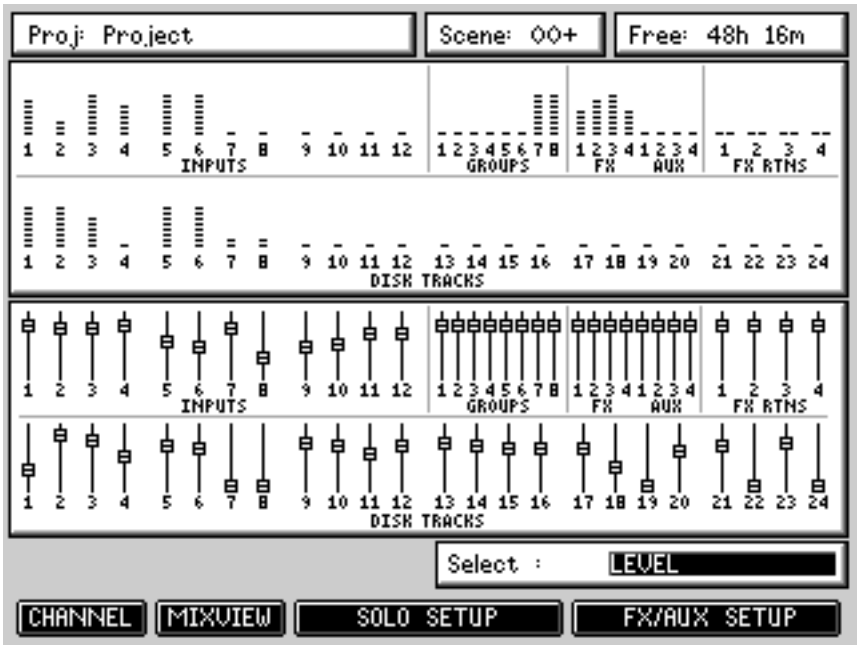
Pressing NORMALISE pops-up this window:



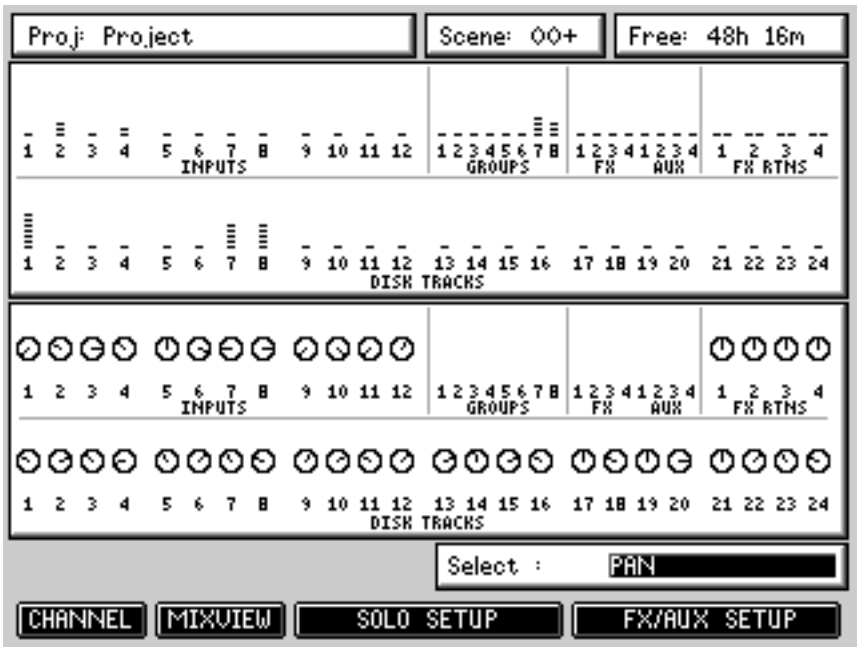
There are no parameters to adjust for this function and pressing PROCESS will simply normalise the selected edit region bring it to maximum level.

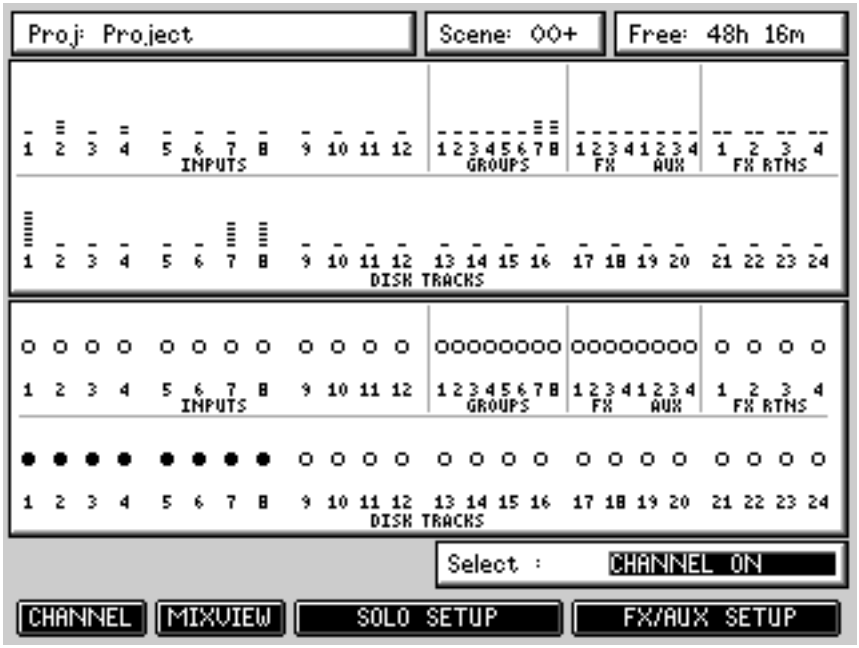
MIXER MODE

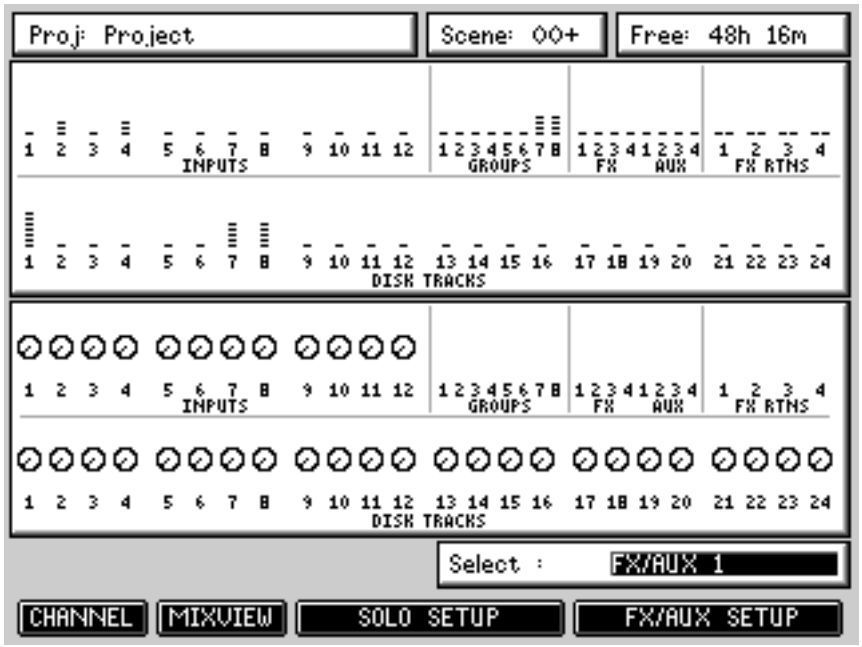
Pressing the MIXER key shows this screen:



Here, you can see an overview of all the channels' level settings. This shows the inputs, the eight groups, the FX send/returns and disk track levels and meters. Using Q6, you may view different parameters:

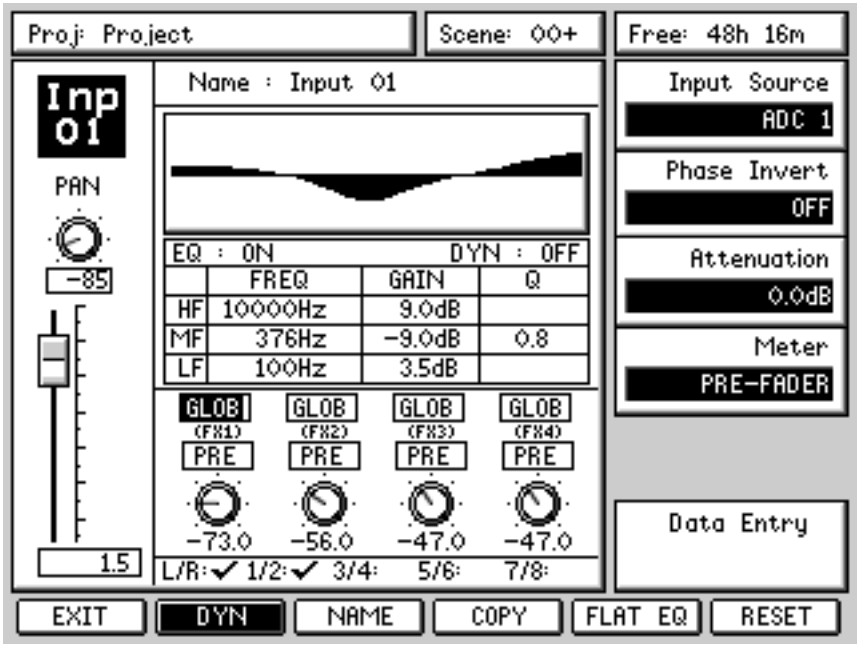



Proj: Project
Scene: 00+
Free: 48h 16m
1 2 3 4 5 6 7 8 9 10 11 12 INPUTS
1 2 3 4 5 6 7 8 GROUPS
1 2 3 4 FX
1 2 3 4 AUX
1 2 3 4 FX RTNS
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 DISK TRACKS
Select : CHANNEL ON
CHANNEL
MIXVIEW
SOLO SETUP
FX/AUX SETUP


Proj: Project
Scene: 00+
Free: 48h 16m
1 2 3 4 5 6 7 8 9 10 11 12 INPUTS
1 2 3 4 5 6 7 8 GROUPS
1 2 3 4 FX
1 2 3 4 AUX
1 2 3 4 FX RTNS
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 DISK TRACKS
Select : FX/AUX 1
CHANNEL
MIXVIEW
SOLO SETUP
FX/AUX SETUP

CHANNEL

In the main MIXER page, pressing CHANNEL (F1) will show something like this screen:



This shows the settings for a selected channel.

The page is designed so that you can use the Q-Channel to set the main parameters (pan, EQ, sends, etc.) and the Q-Link controls to set the others. However, it is also possible to navigate the 'channel' window (i.e. pan, level, EQ, FX parameters) using the CURSOR keys to set precise values from the numeric keypad or using the DATA +/- keys. You can also set values using the DATA ENTRY Q-Link control on Q6.

The Q-LINK parameters on the right of the page are as follows:

INPUT SOURCE — Here, you can select the input source. The choices are:

ADC 1-12	FX 1 L	METRO(nome)
Digital In L	FX 1 R	
Digital In R	FX 2 L	
Aux In L	FX 2 R	
Aux In R	FX 3 L	
2-Track L	FX 3 R	
2-Track R	FX 4 L	
ADAT 1 - 8	FX 4 R	

In this way, you can patch any analogue or digital audio source to any channel.

> ➳**NOTE :** *In the DISK TRACK pages, this parameter is labelled RECORD SOURCE .*

PHASE INVERT — Inverts the phase of the channel.

ATTENUATION — A simple attenuator to compensate for any excessive gain boosts in the EQ.

METER — This allows you to set where in the audio chain you will view the meter shown to the right of the fader. The options are PRE-EQ, PRE-FADE and POST-FADE.

DATA ENTRY — This allows Q6 to be used to enter data as a conventional encoder, the idea being that you move the cursor to the appropriate field and use Q6 to set its value. However, you may find it easier to use the channel's actual control (fader, pan pot, FX/Aux send, EQ (in Q-Channel), etc. You may also use the DATA +/- keys to 'nudge' values and you can also use the numeric keypad (followed by pressing ENTER) to enter parameter's value precisely.

> ➳**NOTE :** *Some parameters do not have totally variable ranges. The EQ frequencies, for example, are actually a list of values - should you type in a certain value, the closest value will be chosen.*

The parameters in the main section of the window are as follows:

NAME — Shows the name of the channel. This can be changed by pressing the NAME key [F2] and entering a 16-character name of your own choosing.

EQ CURVE — Shows the EQ curve for the selected channel as it the EQ controls are adjusted.

EQ CONTROLS — Allows you to set the EQ. The parameter values update as you use the Q-Channel controls or you may enter values directly using the numeric keypad. You can also 'nudge' values with the DATA +/- keys and/or you can set values using the DATA ENTRY Q-Link on Q6. The EQ can be bypassed using the EQ switch shown at the top left of this area (this can be more conveniently done using the Q-Channel's EQ key).

DYN — Switches the channel dynamics on or off.

PAN — Shows/sets the pan position for the selected channel.

> ➳**NOTE :** *In the case of stereo channels such as the FX returns, this control acts as a balance control.*

LEVEL — Shows/sets the fader position for the selected channel. To its right you will see a level meter that shows incoming level. Where this meter derives its signal is determined by the METER parameter on Q5 and you can select to view the level pre-EQ, pre-fade or post fade.

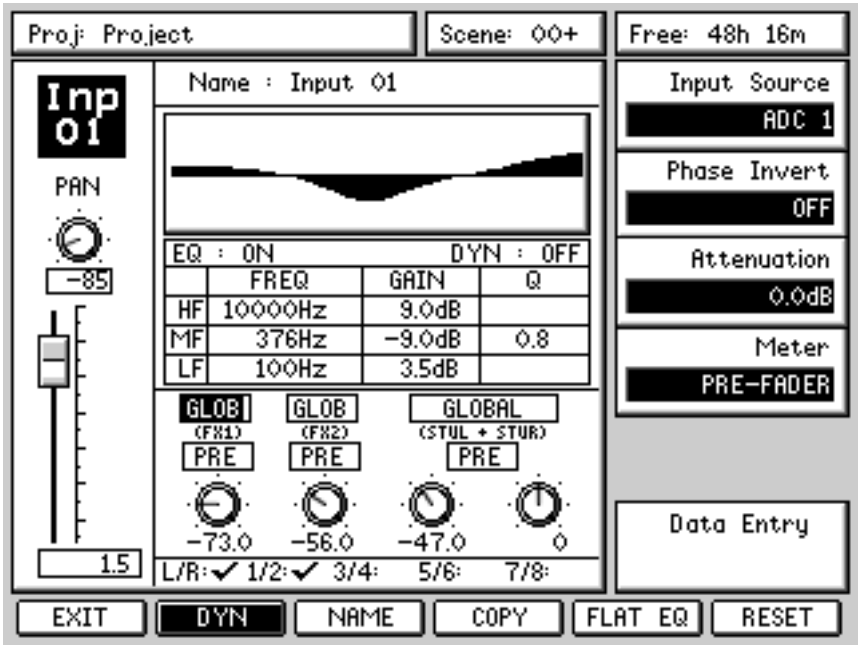
FX/AUX SENDS — In this section you can set the FX/AUX send levels and you can also set whether the sends are pre-fader or post-fader.

Above the PRE/POST controls, it is possible to override the 'global' FX/AUX bus routing. In the main mixer's FX/AUX SETUP page, you can set whether FX/AUX1, 2, 3 and 4 go to the internal effects or to AUX buses 1-4. Here, however, it is possible to override these individually for each channel if you want.

When a channel uses the 'global' bus routing, "GLOB" is shown in this box. However, you can also select FX *n*, AUX *n* or OFF. For FX/AUX 3 and 4, you may also select STU L and STU R (i.e. the studio outputs) to set up a talkback/foldback monitoring mix. A practical example.....

In the FX/AUX SETUP page, FX/AUX1 is set to INTERNAL FX. When you select, say, Input channel 3, it will show GLOB and (FX1) - i.e. that channel is using the 'global' bus setting which is INTERNAL FX. However, you can change this to AUX 1 - it will show AUX 1. All the other channels will show GLOB (FX1) for this send bus but you have individually overridden this on Input 3. The same can be done for other channels and sends, of course.

When a pair of sends are configured as a stereo send, the display changes.



Here, AUX 3 and 4 are configured as a stereo send feeding the STUDIO outputs to facilitate a foldback mix for monitoring in a separate record area. For further information on setting up the FX/AUX routings, please refer to the relevant section later in this manual.

➳ ***NOTE :*** *By default, the FX/AUX sends for the FX return channels are switched off. This helps conserve mixer processing. However, you may switch these on if you need to send effects to other effects channels.*

GROUPS — Under the FX/AUX send section, you can see the group assignment for the selected channel. These may be changed here or in the PATCH pages or more conveniently directly on the console.

The soft key functions on the CHANNEL page are:

EXIT — Takes you back to the main MIXER page.

DYN — Takes you to a page where you can set the channel's dynamics processor (see next).

NAME — Pops up a prompt where you can name the selected channel in the usual way.

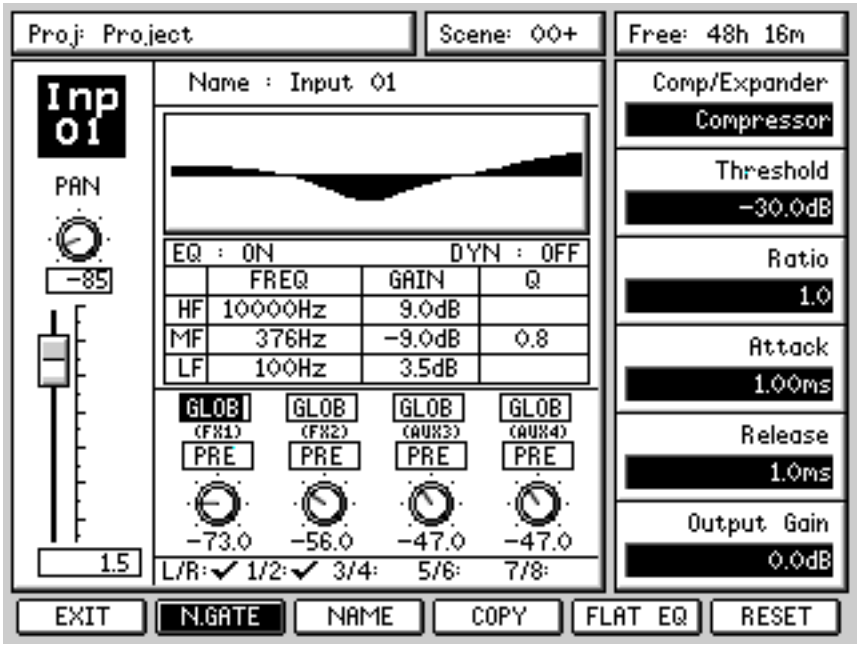
COPY — Allows you to copy the settings of one channel to another.

FLAT EQ — Will flatten the EQ but will leave other channel parameters intact.

INIT — Will initialise the selected channel(s) parameters to flat settings.

CHANNEL DYNAMICS PROCESSOR

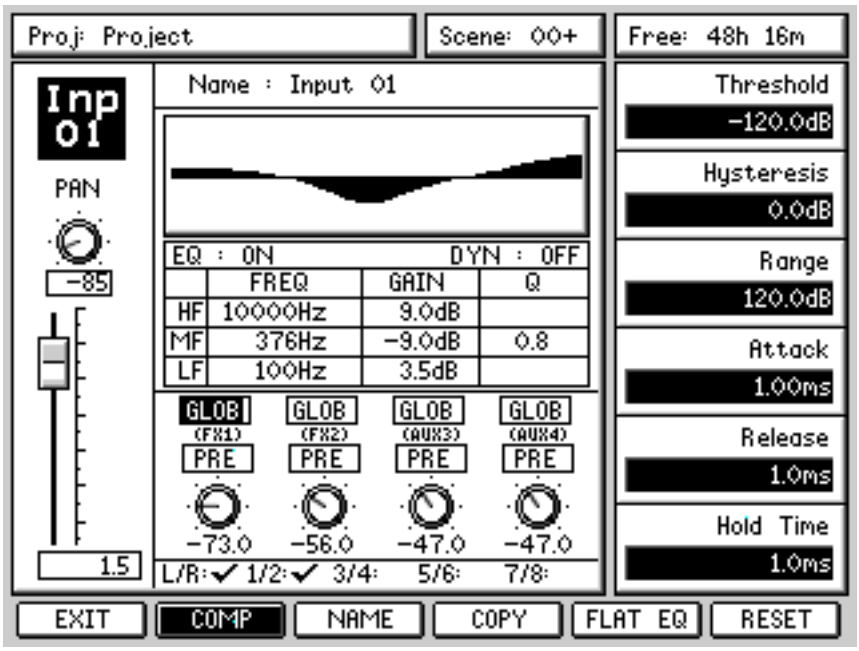
Each input and disk track has its own dynamics processor which is accessed in the DYN page:



The parameters are:

COMP/EXPANDER	Allows you to select whether the processor is a compressor or an expander. The controls described below are the same for either selection.
THRESHOLD	Sets the level at which the compressor starts to work. Signals below this level pass through the compressor unaffected - signals above the threshold level are processed according to the settings made below.
RATIO	Sets the compression ratio (1:1 > 1:100). When set to 1:100, the compressor acts as a limiter.
ATTACK	Sets the period of time before the compressor kicks in. With a fast attack, the signal is processed almost immediately but with longer attack times, the initial part of the sound can be allowed to pass through unaffected thus preserving any transients.
RELEASE	Sets the release time of the compressor (i.e. the time it takes to drop to normal gain once the signal has dropped below the threshold).
OUTPUT GAIN	Makes up for any gain reduction that may occur in the compression process.

Pressing N.GATE [F2] shows the following screen:



The parameters are:

THRESHOLD	Sets the threshold for the noise gate.
HYSTERESIS	Smoothes the closure of the gate and prevents 'chatter' if the gate is rapidly opening and closing with a decaying signal around the threshold level.
RANGE	Allows a certain proportion of the signal to always pass through. Normally, this will be set low so that no signal passes through but setting a slightly higher range can be useful if the gating effect is too abrupt.
ATTACK	Sets the length of time it takes for the gate to open. Typically, this will be set to 0mS.
RELEASE	Set the time it takes for the gate to decay to the threshold level.
HOLD	Determines the length of time the gate is open after the attack cycle has reached full level.

STEREO CHANNELS

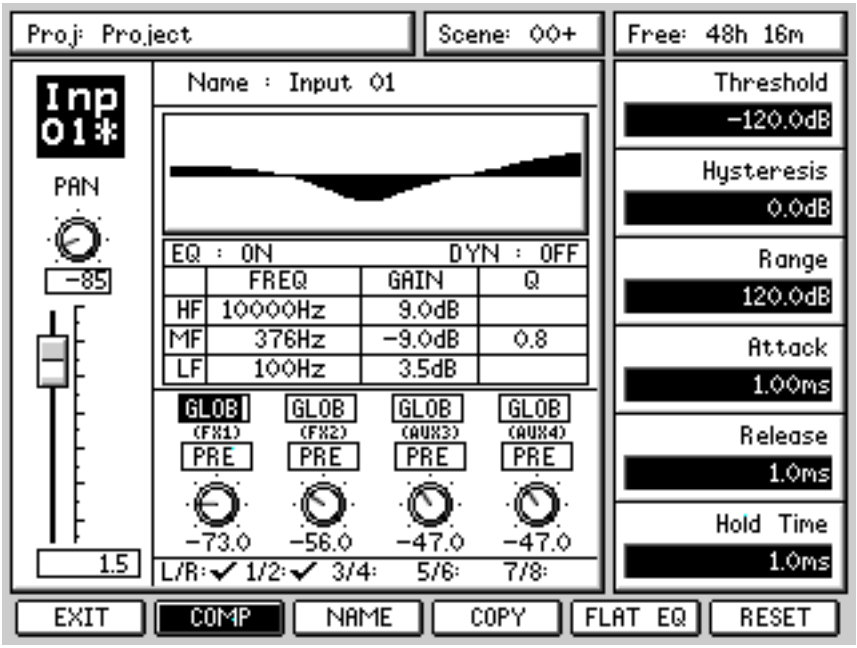
Channels can be linked to act as a stereo pair. This is achieved simply by pressing and holding an odd numbered channel's SELECT key and pressing an adjacent even numbered channel or *vice versa*.

> ***NOTE :*** *When two channels are linked as stereo and one channel's parameters are different to the other, one channel will adopt the settings of the other. This is achieved according to the order in which you press the channel SELECT keys. For example, if you press the even numbered channel first and then the odd numbered channel, the even numbered channel's settings will be copied to the odd numbered channel and the even numbered channel's automation data will be used. If you press the odd numbered channel first and then the even numbered channel, the odd numbered channel's parameters will be copied across to the adjacent even numbered channel and the odd numbered channel's automation will be used.*

When two channels are linked as stereo, anything you do on one channel will be reflected on the other (including level, EQ, FX/Aux sends). However, some parameters remain independent. These are Pan, input source, phase invert and attenuation.

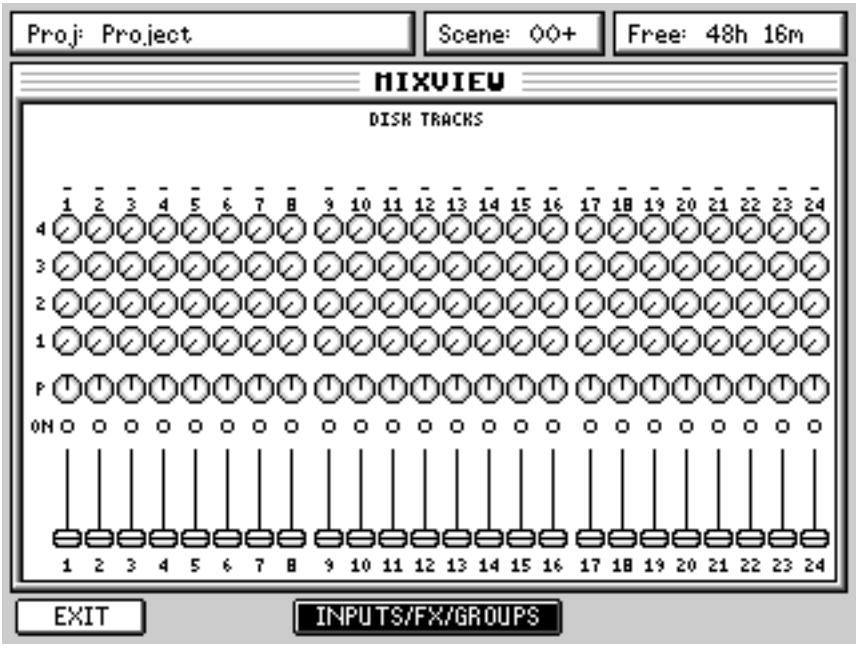
The channel's dynamics processors are similarly linked and any setting you make to one will be reflected in the other. However, when a pair of channels are linked, the channels' sidechains are linked.

➳ ***NOTE :*** *When a stereo linked pair of channels are selected, this is indicated by having an asterisk (*) appended to the channel number - e.g. INP 01 becomes INP 01* when linked to INP 02:*

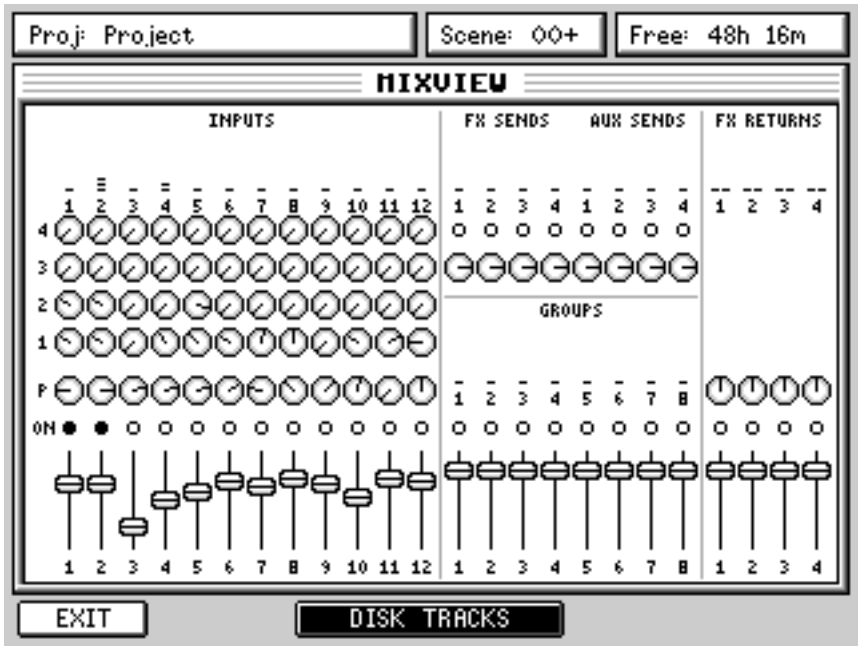


MIXVIEW

To see a more detailed overview of the mixer's status, pressing MIXVIEW in the main MIXER page shows this:



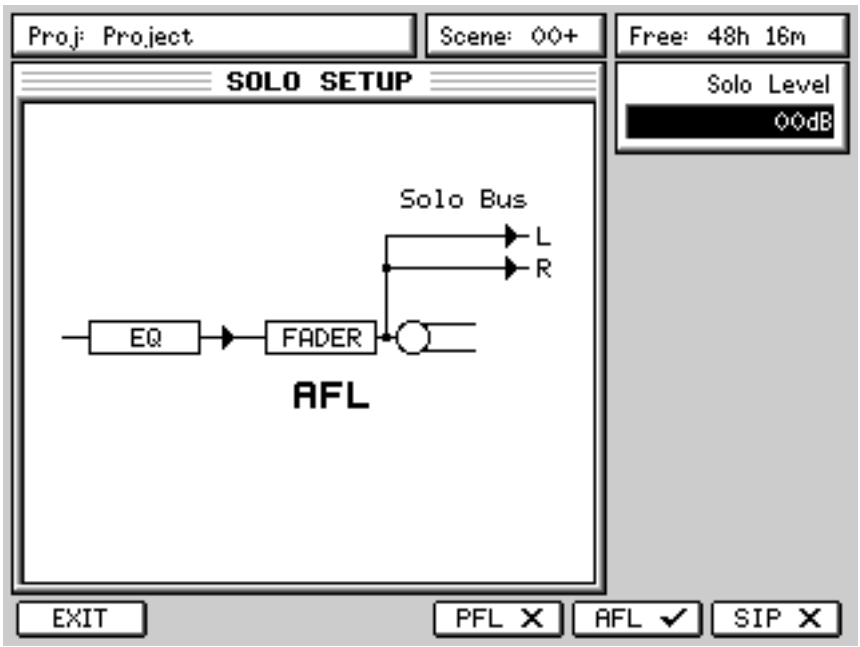
Here, you can see the level, pan, mute/solo status and FX/Aux send levels for the disk tracks. Pressing INPUTS/FX/GROUP (F3/4) shows this screen:



Here, you can see the same for the Inputs, FX send master levels, FX return and the 8 x Group sends. The master fader or stereo L/R bus meters are not shown as these are always visible on the front panel. Neither of these pages are 'editable' as such - they merely reflect the controls' positions as set on the front panel and update in real-time as these controls are adjusted.

SOLO SETUP

Back in the main MIXER mode page, pressing SOLO shows this screen:



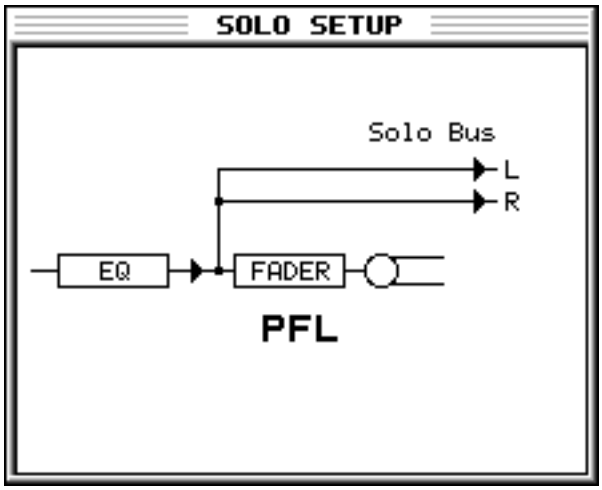
Here, you can set how the SOLO keys will function. The different SOLO modes are selected using F4 - F6. These are:

PFL Pre Fade Listen - you monitor the signal before the fader and the CHANNEL ON switch.

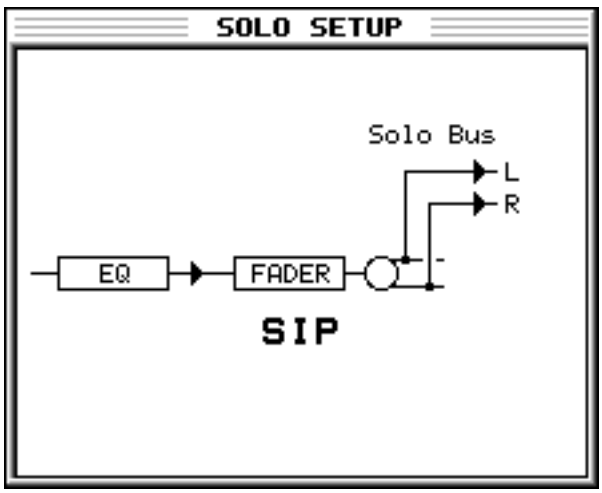
AFL After Fade Listen - you monitor the signal after the fader and after the CHANNEL ON switch.

SIP Solo In Place - you monitor the signal after the channel's pan pot thus allowing you to hear it in its stereo position.

When you select PFL, you see this:



When SIP is selected, this graphic is shown:



The SOLO LEVEL parameter on Q1 sets the level of the solo'd signal. This is most useful when PFL is selected (i.e. the signal appears at full level) to prevent the solo'd signal blowing your speakers!

These setting affect all channels equally and are not specific to any given channel.

USING SOLO

To solo a channel, simply press SHIFT+CHANNEL ON. The key will flash to indicate that the channel is solo'd (and the !!! SOLO !!! LED in the MONITOR section will also flash as added confirmation that a channel is solo'd). To turn SOLO off, simply press the key again.

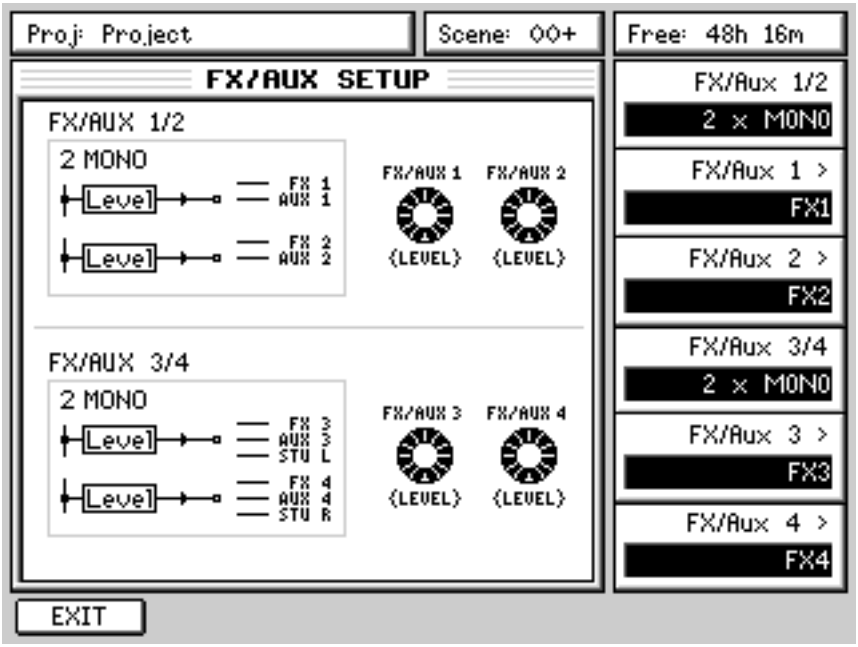
However, as soon as you solo any channel, you enter a solo 'mode'. In this mode....

- To add other channels to the SOLO 'mix', simply press their CHANNEL ON key.
- To hear another channel in isolation whilst other channels are solo'd, use SHIFT+CHANNEL ON - this will solo the newly selected channel in isolation and override previous SOLO selections.

> ➳ ***NOTE :*** *In the case where you have multiple channels solo'd, a quick way to clear them all is to press SHIFT+CHANNEL ON followed by CHANNEL ON again on the same channel. All solo'd channels will be cancelled.*

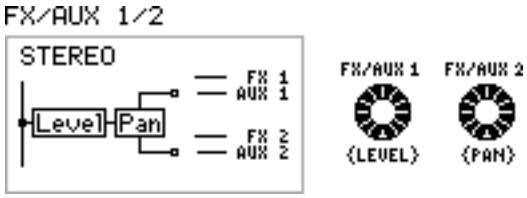
FX/AUX SETUP

Pressing FX/AUX SETUP in the main MIXER page shows this screen:



Here you can set up the configuration of the FX/Aux busses. The Q-Link functions are:

FX/AUX 1/2 — Allows you to configure FX/AUX 1/2 as two mono sends or one stereo send. When configured as STEREO, the graphics change:



The control normally used to set the send level for FX1/Aux 1 now sets the level for the stereo send and the control normally used to set the send level for FX/Aux 2 now sets the send's stereo pan position.

> ***NOTE :*** *There is not much point in setting these sends to stereo when using the internal effects as all the internal effects have a mono input. However, you could use a stereo send and use the pan control (FX/Aux 2) to 'morph' between the two channels. That you can also automate the movement of the pan control means that some special effects could be created.*

FX/AUX 1 > — Allows you to route the FX/Aux send to the INTERNAL FX or to the AUX busses. The send may also be switched off.

FX/AUX 2 > — As for FX/Aux 1 but, of course, for FX/Aux 2

FX/AUX 3/4 are virtually identical to FX/AUX 1/2 except that they can also be routed to the STUDIO L and/or STUDIO R bus. Typically, these are used to set up a foldback monitoring system for recording in a separate studio area.

Using the mono/stereo option for the sends, you can create various different foldback configurations and you can have the following setups:

- 1 x mono foldback mix on either AUX 3 or AUX 4.
- 2 x independent mono foldback sends each with a separate mix on each send.
- 1 x stereo foldback mix with control of level and pan for each channel allowing you to set a stereo mix in the STUDIO outputs.

> ➳**NOTE :** *When STUDIO L is selected, AUX 3's output is muted. Similarly, when STUDIO R is used, AUX 4's output is muted.*

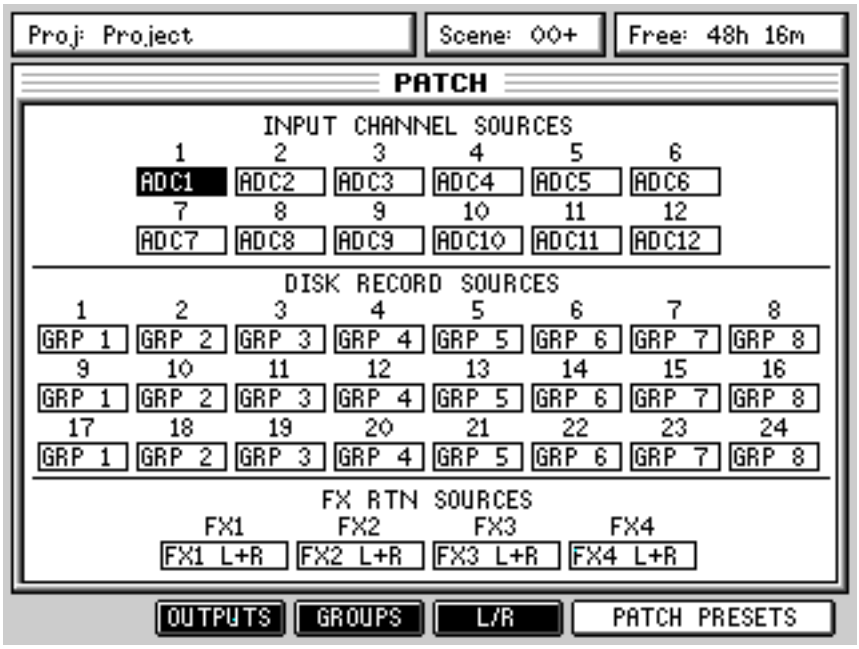
TALKBACK

The DPS24's internal talkback mic is permanently hardwired to the STUDIO outputs and is activated using the TALKBACK button located above the MASTER fader.

> ➳**NOTE :** *The talkback mic only appears at the STUDIO L and/or R outputs are used/enabled in the FX/AUX SETUP page. The talkback mic will not be heard through the STUDIO outputs if busses 3 and/or 4 are routed to the internal effects or the AUX bus.*

PATCH MODE

Pressing SHIFT+MIXER takes you to the PATCH mode where you can route external and internal audio around the DPS24. The first page you see is the CHANNEL SOURCES:


Proj: Project
Scene: 00+
Free: 48h 16m
PATCH
INPUT CHANNEL SOURCES
1 2 3 4 5 6
ADC1 ADC2 ADC3 ADC4 ADC5 ADC6
7 8 9 10 11 12
ADC7 ADC8 ADC9 ADC10 ADC11 ADC12
DISK RECORD SOURCES
1 2 3 4 5 6 7 8
GRP 1 GRP 2 GRP 3 GRP 4 GRP 5 GRP 6 GRP 7 GRP 8
9 10 11 12 13 14 15 16
GRP 1 GRP 2 GRP 3 GRP 4 GRP 5 GRP 6 GRP 7 GRP 8
17 18 19 20 21 22 23 24
GRP 1 GRP 2 GRP 3 GRP 4 GRP 5 GRP 6 GRP 7 GRP 8
FX RTN SOURCES
FX1 FX2 FX3 FX4
FX1 L+R FX2 L+R FX3 L+R FX4 L+R
OUTPUTS GROUPS L/R PATCH PRESETS

The INPUT CHANNEL SOURCE fields at the top of the screen allow you to select the input source for each of the 12 input channels. The choices are:

ADC 1-12 - default	FX1 L	METRO(nome)
Digital In L	FX1 R	- - - - - (no assignment)
Digital In R	FX2 L	
Aux In L	FX2 R	
Aux In R	FX3 L	
2-Track L	FX3 R	
2-Track R	FX4 L	
ADAT 1 - 8	FX4 R	

In this way, you can patch any analogue or digital audio source to any channel. The default for each input is to have as its source a corresponding ADC. However, these can changed to your own requirements. It also allows the input channels to be used for mixing audio sources other than analogue inputs.

For example, you could patch in the internal FX outputs into two input channels so that they can be EQ'd, compressed, gated, etc. Similarly you could patch in a CD or DAT or other stereo digital audio source via the Digital In L/R inputs.

If you have an AKAI professional S5000/6000 with the optional ADAT board fitted, you can patch the ADAT inputs to the channels to have a digital feed of the sampler's individual outputs.

Assignments in this page (and all the other PATCH pages) are made by using the cursor keys to move to the appropriate box and then using the DATA +/- keys to select your options.

The DISK RECORD SOURCES allow you to select audio sources to be recorded to the disk tracks. The source options are:

INPUTS 1-12	METRONOME
GROUPS 1-8 - default	FX1 L
ADC 1-12	FX1 R
Digital In L	FX2 L

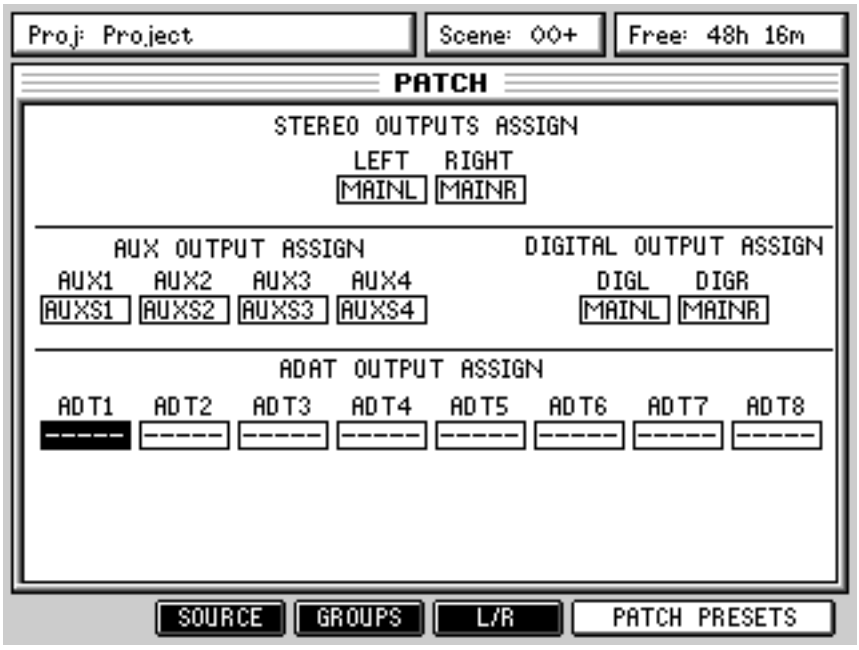
Digital In R	FX2 R	
Aux In L	FX3 L	
Aux In R	FX3 R	
2-Track L	FX4 L	
2-Track R	FX4 R	
ADAT 1 - 8	- - - - -	(no assignment)
Stereo bus L		
Stereo bus R		

This flexible assignment allows many possibilities. For example, you could patch the ADCs directly to the track inputs. Not only would this provide very clean, unprocessed recording direct to disk but would also free up the 12 input mix channels for other audio sources such as ADAT (the digital individual outputs of an S5000/6000 for example).

The stereo FX RTN SOURCES allow you to configure the FX RETURNS channels. The source options are:

FX1 L+R	(the stereo outputs of Internal FX1) - default
FX2 L+R	(the stereo outputs of Internal FX2) - default
FX3 L+R	(the stereo outputs of Internal FX3) - default
FX 4 L+R	(the stereo outputs of Internal FX4) - default
ADCs 1+2, 3+4, 5+6, 7+8,9+10, 11+12	
Digital In L+R	
Aux In L+R	
2-Track L+R	
ADAT 1+2, 3+4, 5+6, 7+8	
- - - - -	(no assignment)

Pressing OUTPUTS shows this screen:



Here, you can patch internal audio sources to any of the DPS24's outputs. Basically, in this page, any audio source within the DPS24 can be assigned to any of the physical output connectors on the rear panel. The available audio sources are:

INPUTS 1-12	SOLO L	FX1 L	(FX 1 output L)
TRACKS 1-24	SOLO R	FX1 R	(FX 1 output R)
ADC 1-12	FX SEND BUS 1	FX2 L	(FX 2 output L)
DIGI L	FX SEND BUS 2	FX2 R	(FX 2 output R)
DIGI R	FX SEND BUS3	FX3 L	(FX 3 output L)
AUX IN L	FX SEND BUS 4	FX3 R	(FX 3 output R)
AUX IN R	AUX SEND BUS 1	FX4 L	(FX 4 output L)
2-TRACK IN L	AUX SEND BUS 2	FX4 R	(FX 4 output R)
2-TRACK IN R	AUX SEND BUS 3	- - - - -	(no assignment)
ADAT 1-8	AUX SEND BUS 4		
GROUPS 1-8			
Stereo L - default			
Stereo R - default			

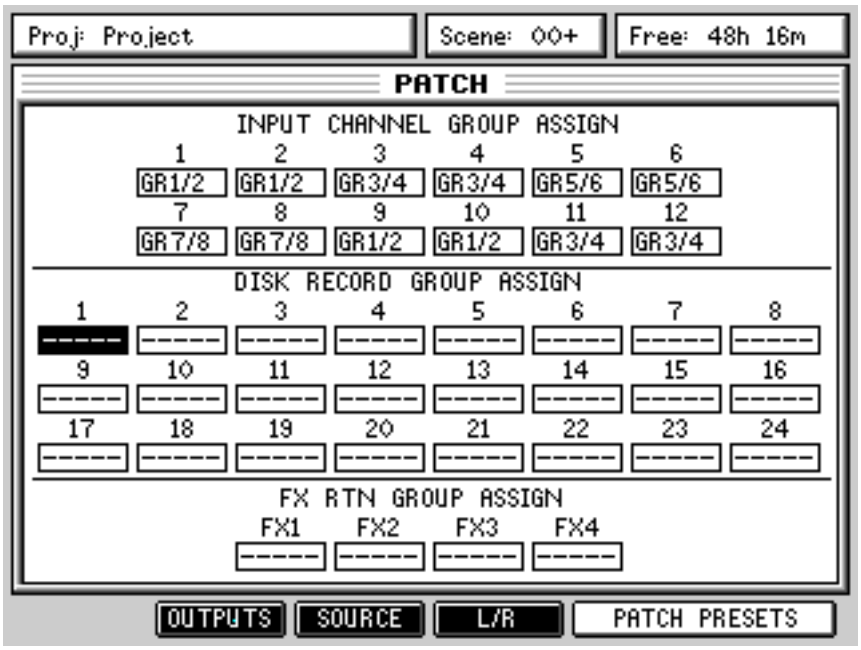
STEREO OUTPUTS ASSIGN allows you set which of the above audio sources will appear at the STEREO outputs (the default, of course, is ST L and ST R - stereo bus left and right).

AUX OUTPUT ASSIGN allows you to set which of the above audio sources is sent to the four aux send outputs (the default is AUX 1-4).

DIGITAL OUTPUT ASSIGN allows you to set which of the above audio sources will appear at the stereo digital outputs (the default, of course, is ST L and ST R - stereo bus left and right).

ADAT OUTPUT ASSIGN allow you to set which of the above audio is sent to the optical digital output. The default is no assignment (- - - - -).

Pressing GROUPS shows this screen:


Proj: Project
Scene: 00+
Free: 48h 16m
PATCH
INPUT CHANNEL GROUP ASSIGN
1 2 3 4 5 6
GR1/2 GR1/2 GR3/4 GR3/4 GR5/6 GR5/6
7 8 9 10 11 12
GR7/8 GR7/8 GR1/2 GR1/2 GR3/4 GR3/4
DISK RECORD GROUP ASSIGN
1 2 3 4 5 6 7 8
9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24
FX RTN GROUP ASSIGN
FX1 FX2 FX3 FX4
OUTPUTS
SOURCE
L/R
PATCH PRESETS

INPUT CHANNEL GROUP ASSIGN allows you to decide which groups the input channels will be assigned to and any channel may be assigned to any group 1-8. Note, however, that routing is done in pairs.

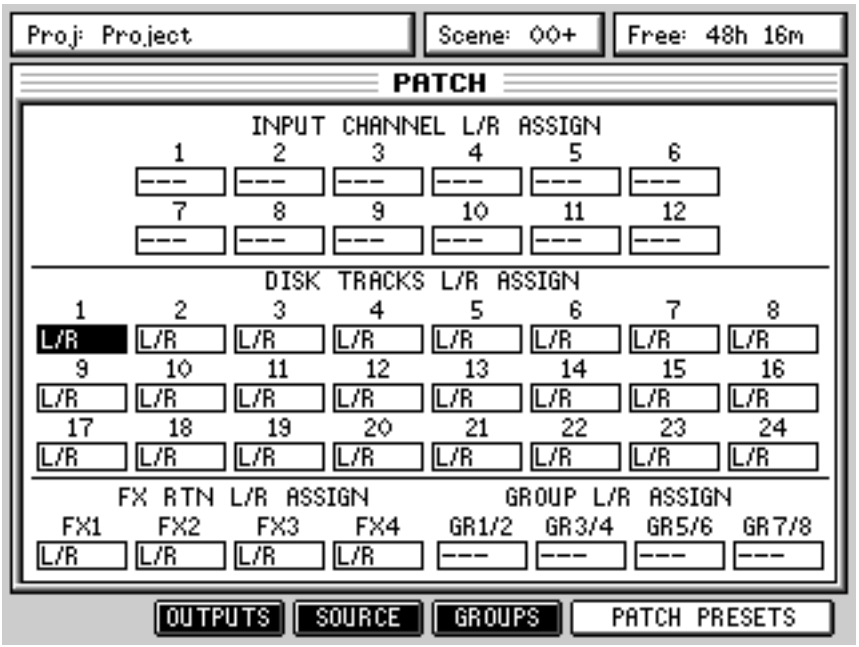
> ➳**NOTE :** *Although it is perfectly feasible to route channels to groups in this page, you may find it easier to use the front panel keys - i.e. press the appropriate GROUP ASSIGN key and then press the channels you want to assign to that group.*

DISK RECORD GROUP ASSIGN allows you to select which groups the 24 disk tracks will be routed to and any track may be assigned to groups 1-8. As with the input channels, that routing is done in pairs. Regarding the NOTE above, you may find it easier to assign disk tracks to groups in the same way.

FX RTN GROUP ASSIGN allows you to select which groups the internal effects returns will be routed to. Regarding the NOTE above, you may find it easier to assign disk tracks to groups in the same way.

> ➳**NOTE :** *You can only route any channel to one group at a time. For example, you cannot route Input 1 to Group 1/2* ***and*** *Group 3/4.*

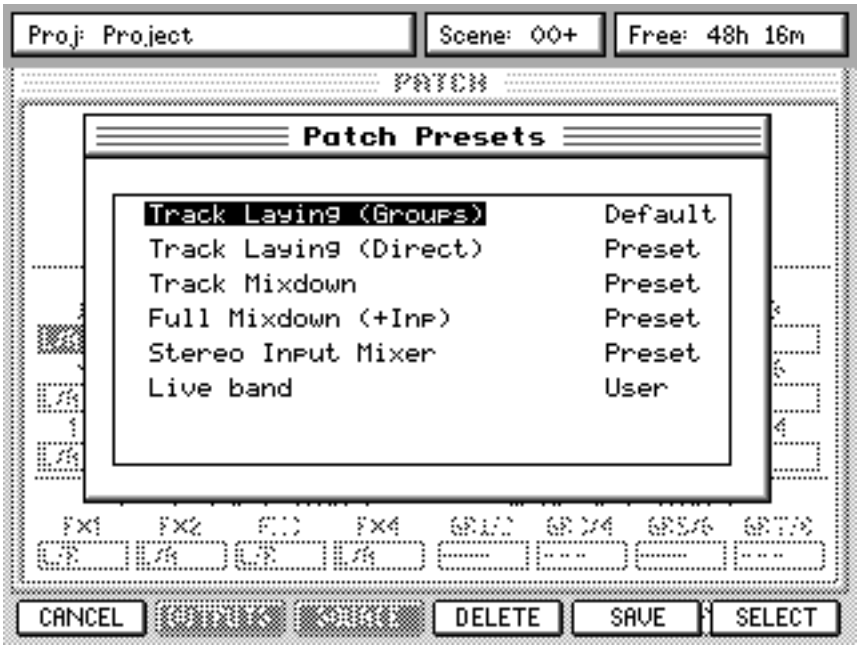
Pressing L/R shows this screen:


Proj: Project
Scene: 00+
Free: 48h 16m
PATCH
INPUT CHANNEL L/R ASSIGN
1 2 3 4 5 6
--- --- --- --- --- ---
7 8 9 10 11 12
--- --- --- --- --- ---
DISK TRACKS L/R ASSIGN
1 2 3 4 5 6 7 8
L/R L/R L/R L/R L/R L/R L/R L/R
9 10 11 12 13 14 15 16
L/R L/R L/R L/R L/R L/R L/R L/R
17 18 19 20 21 22 23 24
L/R L/R L/R L/R L/R L/R L/R L/R
FX RTN L/R ASSIGN
FX1 FX2 FX3 FX4
L/R L/R L/R L/R
GROUP L/R ASSIGN
GR1/2 GR3/4 GR5/6 GR7/8
--- --- --- ---
OUTPUTS
SOURCE
GROUPS
PATCH PRESETS

This page allows you to route channels to the stereo L/R bus. All channels (inputs, disk tracks, FX return and group outputs) can be assigned to the stereo L/R bus. The options here are simple - off (- - - -) or L/R.

As with the group assignments, you may find it easier to route channels to the stereo L/R bus using the control surface's dedicated keys.

PATCH PRESETS [F5/6] provide access to patch presets and pressing it shows this pop-up:



Using the cursor keys, you can move up and down the list of available presets and, using the SELECT key [F6], totally re-configure the DPS24's internal patching. In this way, you can have presets suitable for track laying and overdubbing, presets for mix down and so on.

For example, TRACK LAYING (GROUPS) - the default - allows track laying via the groups. To route any input(s) to track(s), they go via the groups and the signal is monitored via the disk tracks. This also has the advantage that several inputs can be mixed to tracks.

However, you may prefer a more direct approach in TRACK LAYING (DIRECT) where an input goes directly to a disk track. The advantage of this is that it is easy to record Input 1 to Track 1, Input 2 to Track 2, etc., but is more awkward if you want to record, for example, Input 3 to, say, Track 12 - this would require you either physically un-plug Input 3 and plug it into Input 12 or would require you to re-patch Input 3 to Track 12 in the patch page.

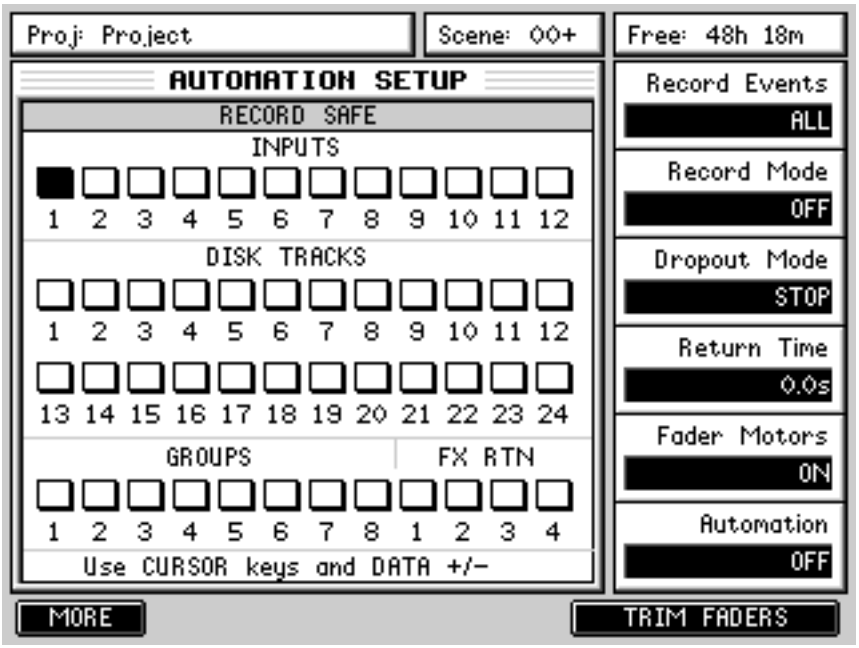
TRACK MIXDOWN routes all 24 tracks (and the FX returns) to the stereo L/R bus for stereo mixdown whilst FULL MIXDOWN routes *all* mixer channels (including the inputs) to the stereo L/R bus so that you can mix all 24 tracks AND external instruments.

If the presets don't fit your needs exactly, it is possible to save your own configurations. Pressing SAVE [F5] pops up a prompt which allows you to name your preset. Once saved, that preset can be used at any time you want.

You can also delete existing presets if you want using the DELETE key [F4]. This will pop-up a prompt asking you to confirm the action.

AUTOMATION

Pressing AUTOMATION shows this screen:



Down the right are the various automation parameters that can be set. They are:

RECORD EVENTS — Allows you to choose which events will be recorded. The options are:

- ALL — All controls will be recorded
- FX/AUX SEND — Only FX/AUX send control movements will be recorded.

> ***NOTE:*** *Even though this parameter is labelled 'FX/AUX SEND, in the case where one or other (or both) of the FX/AUX sends are configured as 'stereo' sends, the 'pan' movement of FX/AUX2 and FX/AUX4 is recorded in the automation.*

- CHANNEL ON — Only CHANNEL ON switching will be recorded.
- PAN — Only pan control movements will be recorded.
- FADER — Only fader movements will be recorded.

The default is for ALL events to be recorded but this may not be appropriate in some circumstances. For example, you may want to record a pass of CHANNEL ON switching - to reduce the risk of accidentally catching a fader and moving it, you could set the RECORD EVENTS to CHANNEL ON so that only this switching will be recorded.

RECORD MODE — This allows you to select from three automation record modes:

- OFF — Automation data will not be recorded.
- AUTO DROP — Because of the faders' touch sensitivity, fad ers will be dropped into record as soon as they are touched (they do not have to be moved).

Other controls will be recorded into the automation data as soon as they are moved.

CHANNEL ON status will be recorded as soon as a key is pressed.

> ➳**NOTE :** *Of course, the above depends on the setting of the RECORD EVENTS parameter. If, for example, RECORD EVENTS is set to PAN, only PAN control movements will be recorded if any PAN controls are moved. Touch a fader, switch a channel and/or adjust the FX/AUX controls in this case, those movements will be ignored - only PAN movements will be recorded into the automation data.*

This is the most useful of the three modes as you can simply grab a fader or control (or press a switch) for it to be added to the automation data.

OVERWRITE — This is a bit more 'destructive' in that automation recording starts as soon as you press PLAY. To prevent accidental overwriting, when this mode of recording automation is selected, the CHANNEL SELECT keys flash, prompting you to select which channel(s) you wish to overwrite. Once selected, those CHANNEL select keys are lit steadily and as soon as you press PLAY, their position is recorded.

It is also possible to press PLAY and *then* press a CHANNEL SELECT key to drop that channel into record (much like dropping audio into record using the TRACK SELECT keys).

DROPOUT MODE — Allows you to select what will happen when you drop out of an automation record pass. The options are:

STOP — The automation recording continues until STOP is pressed on the transport key.

In the case of OVERWRITE mode, recording on a given channel will stop if it is de-selected using the CHANNEL SELECT key(s).

RETURN — When recording stops, the controls will return to their previously recorded position using the return time parameter (see below).

In AUTO DROP mode, the faders will drop out of record as soon as they are released.

TO END — Will overwrite all events to the end of the project.

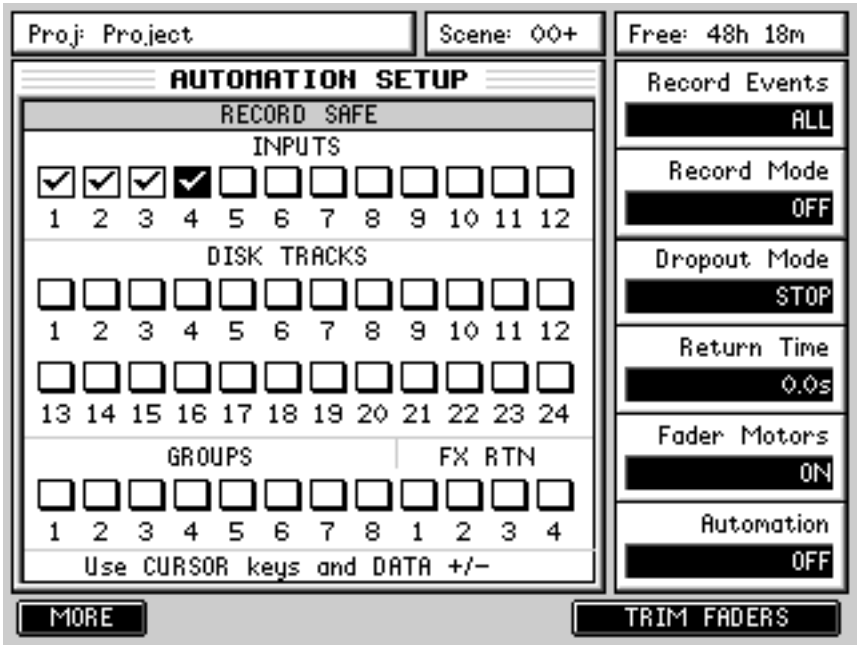
RETURN TIME — When RETURN is enabled (see later), this sets the time it takes for controls to return to their original value.

FADER MOTORS — Allows you to switch the fader motors on or off. Typically, you might switch the motors off once you have recorded your automation data. The automation will playback but you won't have the distraction of the faders moving up and down.

AUTOMATION — This switches automation ON or OFF.

> ➳**NOTE :** *AUTOMATION must be switched ON not only to playback automation but also to record automation.*

The main panel shows the RECORD SAFE function. Here, you can 'protect' channels from being accidentally overwritten when automation data is being recorded. Channels can be protected by moving the cursor to the appropriate channel(s) and using the DATA +/- keys to switch protection on (+) or off (-). When a channel is protected, it is 'checked' (✔):



When a channel is 'safe', any control movement or switch action is ignored when automation is being recorded.

ABOUT THE AUTOMATION

To record automation data, the automation must be enabled so set AUTOMATION to ON. Also, use Q2 to select AUTO DROP or OVERWRITE record modes.

With OVERWRITE, it is necessary to select the channel(s) you wish to record automation data on. When you select OVERWRITE, the CHANNEL SELECT keys flash (much like the track RECORD SELECT keys flash) - select the channel(s) for which you wish to record automation passes. As soon as you press PLAY, the DPS24 will start recording automation on the selected channel(s) and when you press STOP, recording stops. As a safety feature, the track(s) selected for automation recording are automatically de-selected when you press STOP.

You may also use OVERWRITE to drop-in to automation record. In this case, don't select any channels and press PLAY - at the required moment, press a CHANNEL SELECT key to drop that channel into automation record.

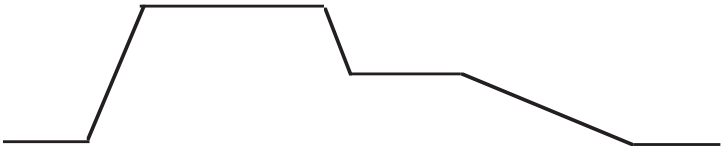
The OVERWRITE mode is also a useful way of 'erasing' automation events. For example, you may have dropped in a channel mute that you now want to erase. Select OVERWRITE, select the channel you want to overwrite and, ensuring that the channel is ON, press play and play over the point you muted it. Press STOP. Now when you playback over that area, the channel will remain on (and the mute will effectively have been erased).

The AUTO DROP selection is probably the easiest mode to use. Because of the touch sensitive faders, when AUTO DROP is selected, automation recording only starts when you grab a fader. Similarly, the other controls (pan and FX/Aux sends) only become active when moved.

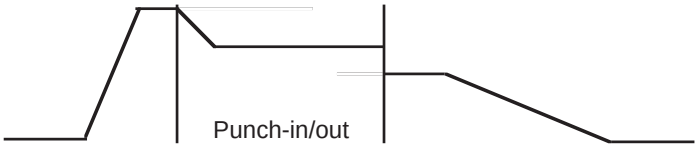
To record in AUTO DROP mode, select AUTO DROP using Q2, locate to the position where you want automation to begin and press PLAY on the main transport section of the DPS24. Nothing will be recorded until you move a fader or, if they are enabled, a pan control or FX/Aux send. If you are happy with the result, rewind and continue recording fader and control movements for other channels in the same way.

Also, if you make a mistake, using AUTO, you can grab the fader/control during automation record and overwrite the original control movement. For example, a level change going into the chorus might not be quite right. Rewind to a point just before the mistake, enable AUTO record and press PLAY. At the appropriate position, ride that fader with the correct movement. Press STOP on the transport section. Rewind and check the updated version. If you like it, keep it. If you don't, press UNDO and try again.

However, doing this kind of 'Automation drop-in' can be a potential source of problems. For example, with this original fade data:

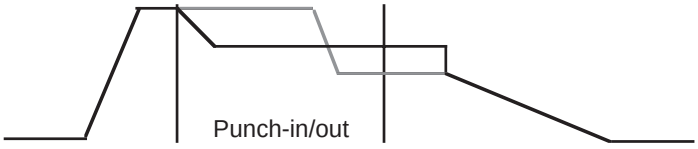


You punch-in/out some automation data as follows:

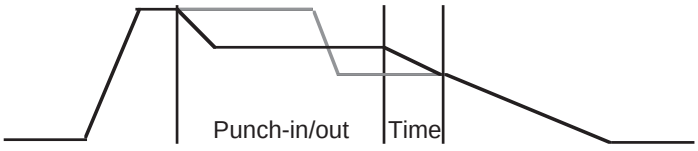


The problem here, however, is that the level at the punch-out does not match the original.

When the automation is played back, the result will be:



The level will stay constant after the drop-out point until a fader movement is detected at which point it will jump abruptly to the new value. A way around this is to enable RETURN. Setting a longer value in the RETURN field will result in the following:



With judicious setting of the RETURN TIME parameter, the value will 'return' gently to the original level resulting in a smoother transition.

IMPORTANT NOTE ABOUT SCENE 00 : INITIAL SCENE

When using the DPS24's automation, it is important to understand the importance of Scene 00, the Initial Scene.

Scene 00 holds the initial state of the mixer for the project and is recalled whenever a project is loaded or an automation pass is started. This means that when the dynamic automation is ON, scene 00 will be automatically recalled whenever PLAY is pressed to ensure that all the controls, including those which are not dynamically automated, are set to the correct value in relation to the current playback time. It is therefore important to ensure that you store the required mixer state to scene 00 before starting to use the dynamic automation and update it whenever you want to change the initial state of a control during automation playback.

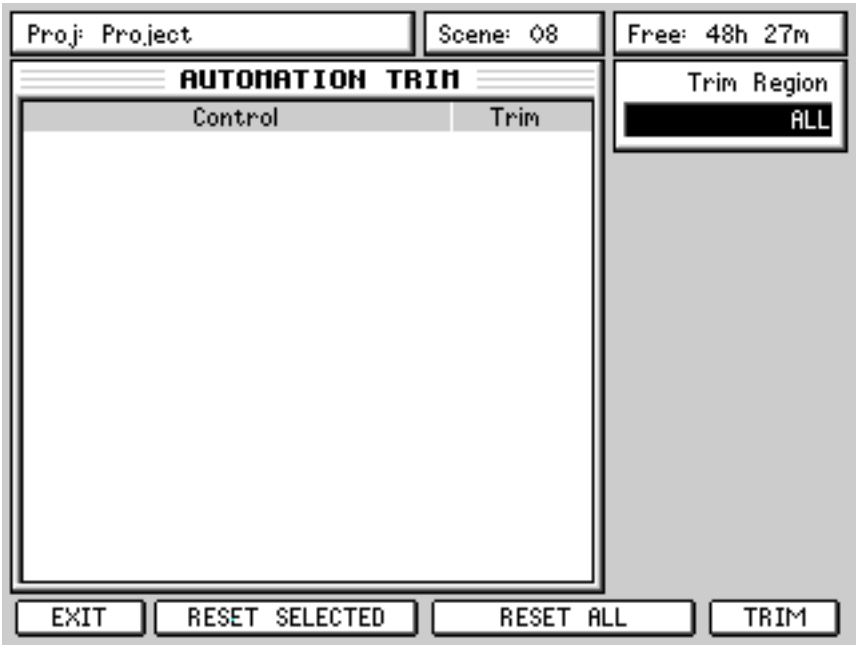
As an example, Scene 00 in your project has all channels' EQ set 'flat' (i.e. no EQ applied). Some way through the project, however, you adjust one channel's EQ. When you press PLAY, that channel's EQ will be reset to the settings stored in Scene 00. Another example is that you set a pair of channels to be linked as a stereo pair at some point and set each channel's pan position to hard left and right respectively - when you press PLAY, if that link and the pan positions have not been saved into Scene 00, they will be reset.

In other words, if you make a change that you like to any parameters that are not dynamically automated, ensure that you store the changes in Scene 00 so that they are recalled with the dynamic automation.

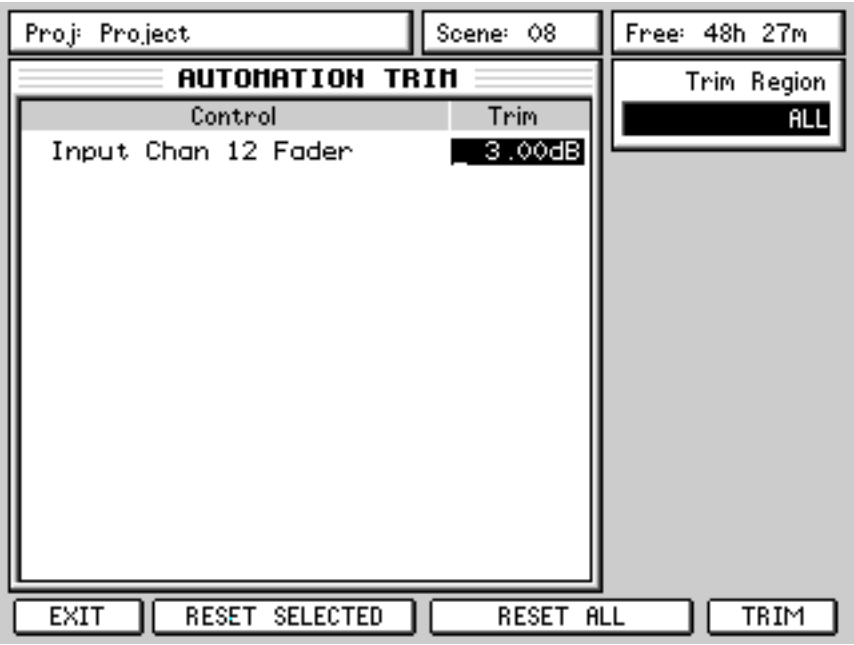
TRIM FADERS

Another way to edit automation data is to use TRIM FADERS. This allows you to add or subtract values to previously recorded automation data. For example, you may have recorded a perfect set of fader movements only to find the whole thing needs to be 3dB higher. Rather than re-record the whole thing again, you can use TRIM to add 3dB to that channel.

Pressing TRIM snaps all the faders to midway position, switches the fader motors off and shows the following screen:



Initially, the AUTOMATION TRIM window is blank - you can adjust the fader positions at this point. Simply move a fader (or faders) and they will be shown in the AUTOMATION TRIM window:



The window shows the fader(s) selected for trimming. In the event of a mistake (or if you change your mind) you can reset all the channels using RESET ALL (F3/4) or you can use the CURSOR UP/DOWN keys to select a particular fader and reset just that one using RESET SELECTED (F2/3).

Pressing TRIM will add or subtract the value shown in the TRIM column - in the example shown on the previous page, 3dB will be added overall to the automation data on Input Channel 12.

You can also be more selective about the region you want to trim. It might be that because of changes made to the mix, an entire channel needs to boosted/reduced using TRIM. In this case, use Q1 to select ALL this will affect the selected channel(s) for the duration of the project.

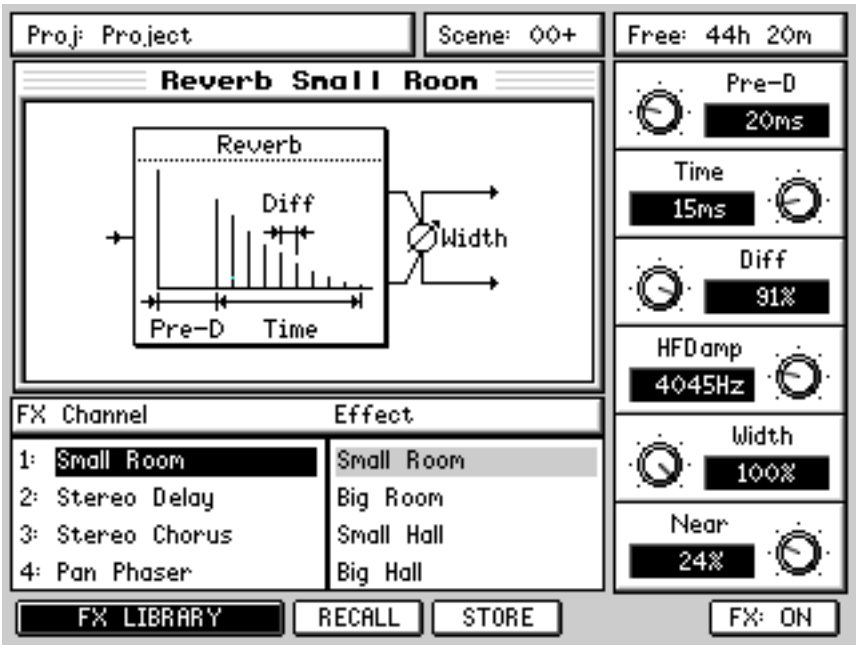
However, it could be that only a small section of the project needs to be trimmed. In this case, identify the region you wish to trim and set IN/OUT points for that region and use Q1 to select IN<>OUT - only automation data within that region will be affected.

The TRIM operation does not have to be a 'static' automation edit process performed in isolation - the function is available during playback allowing you to 'ride' fader levels whilst listening to the mix to add or subtract the required amount of level to the selected channel(s). When you are happy with the adjusted level(s), press TRIM to commit the adjustment. Please note, however, that TRIM fader movements are not recorded - just the new fader value when TRIM is pressed.

> ➳ ***NOTE :*** *The TRIM functions only apply to fader movements - it is not possible to trim pan and/or FX/Aux automation data.*

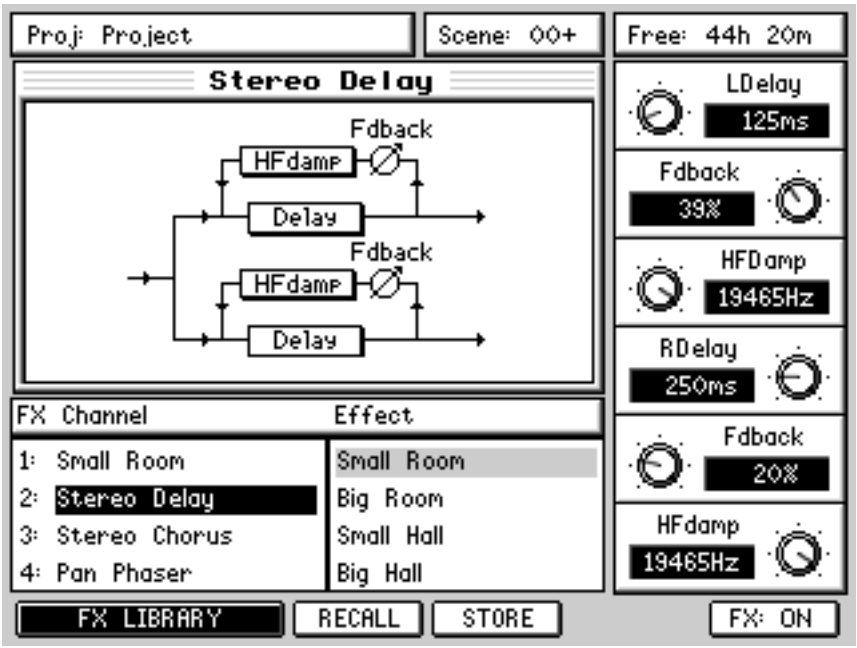
EFFECTS MODE

Pressing FX shows (something like) this screen:



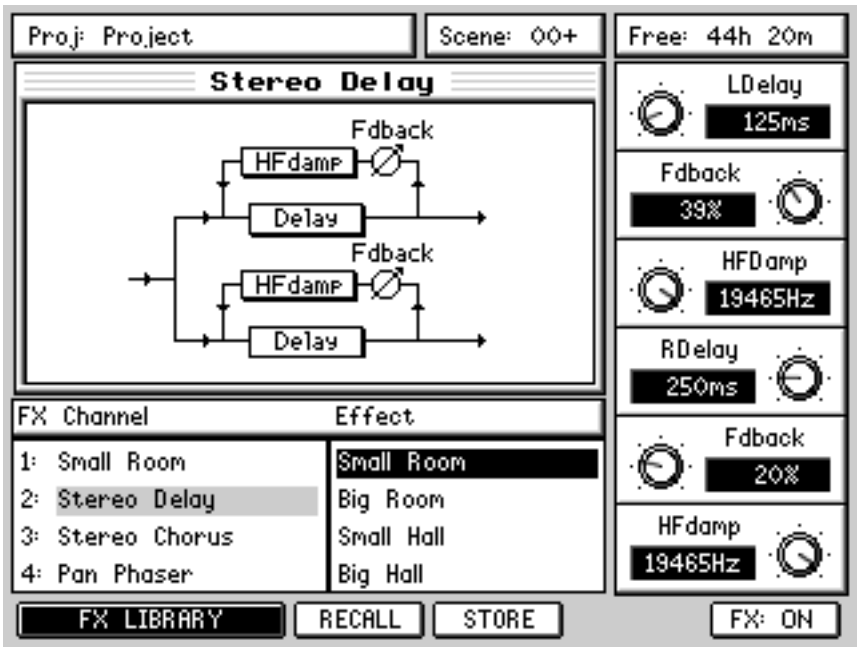
You can see the four effects channels and the effect type assigned to them. A graphic depiction of the selected channel's effect is shown and the effect's parameters are available down the right side of the panel for editing.

Channels are selected using the CURSOR UP/DOWN keys:

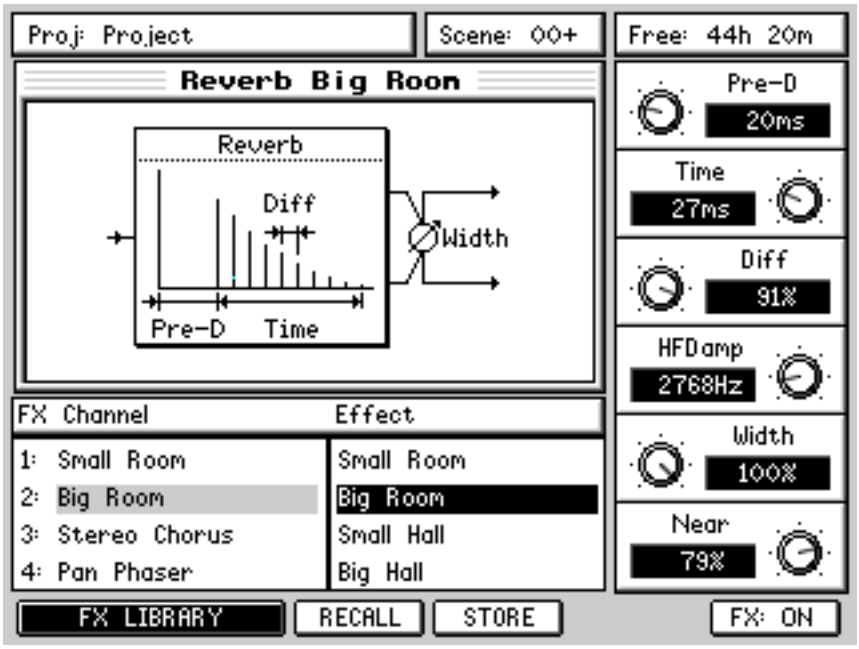


The effect assigned to the selected channel is shown in the EFFECTS list and its parameters are available for immediate editing.

To select effect *types*, move the cursor to the EFFECT list using the CURSOR > key:



The cursor moves to the right hand column where you can select effects. To select a different effect, use CURSOR UP/DOWN. The new effect is not active until RECALL [F3] is pressed. Pressing RECALL will assign the effect type to the selected effects channel:



The FX Channel shows the new effect assignment and the new effect's parameters are available for editing. The effect window's title also shows the new effect assignment.

Effects assignments are saved with the current scene so that recalling that scene recalls the correct effect. Because scenes are recalled with the project, this ensures that the correct effects are associated with the project.

EDITING EFFECTS

To edit an effect, no special mode is required - simply change the Q-LINK controls.

The edit remains valid for the effects channel until either another effects preset is selected or another project is loaded/created.

> ➳**NOTE :** *If you edit an effects preset but then go on to select another preset, if you re-select the effects preset you edited, its original values will be recalled, NOT your edited values. If, when editing an effect, you feel that it is worth keeping, you should save it to the FX LIBRARY (see next section).*

Edited effects are stored as part of the current scene so that when you subsequently load that scene, the correct effects assignment *and* their customised settings are recalled.

STORING EDITED EFFECTS

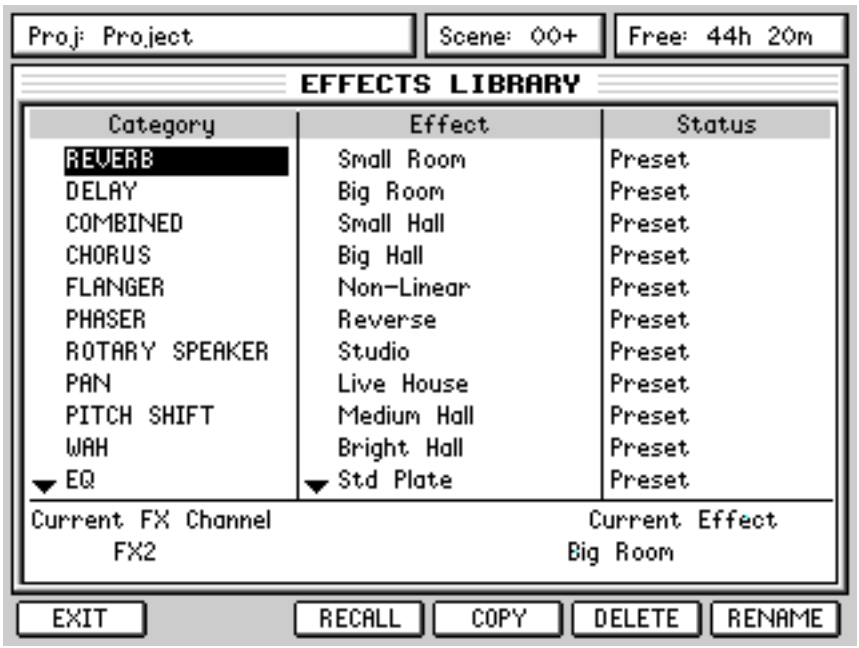
If you have edited an effect that you think you may want to keep for use in other projects, press the STORE key [F4]. You will receive the usual naming prompt where you may enter a suitable name. Pressing OK [F6] will save that effect to the FX Library in the selected category. For example, if you have edited a chorus effect - perhaps using STEREO CHORUS as the basis for your customised effect - when you store the effect, it will automatically be stored to the CHORUS category. Likewise, if you edit a delay effect and store it, it will automatically be added to the DELAY effects category (see next for details of the FX Library and effects categories).

The new effect can be used in other projects.

EFFECTS LIBRARY

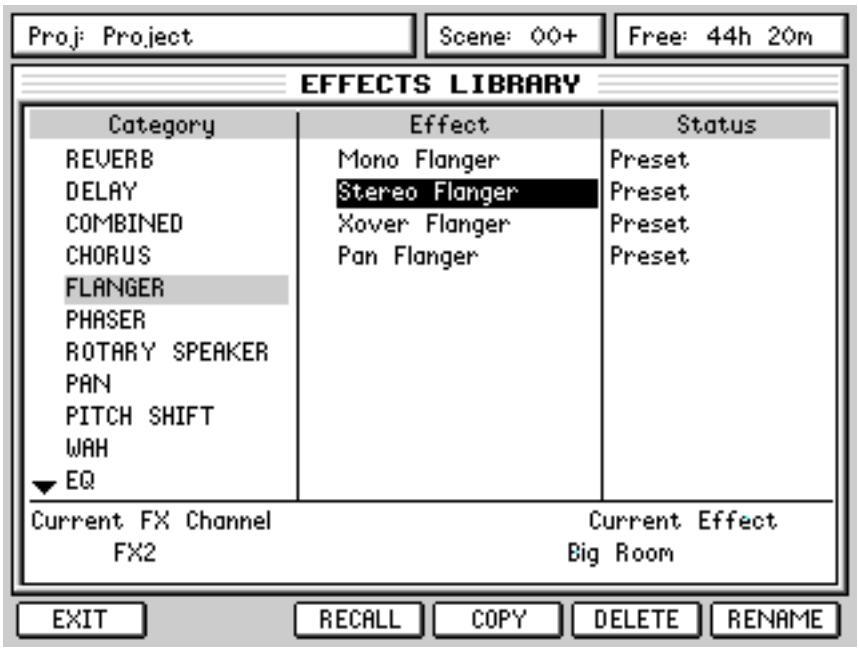
Another way to select effects is by way of the EFFECTS LIBRARY. The EFFECTS LIBRARY also allows you to store effects for recall in other projects.

To select an effect from the library, first select the channel you want to assign the effect to. Now press F1/2 - FX LIBRARY - in the main FX page. You will see this screen:



Using the CURSOR UP/DOWN key, you can select an effects 'category' such as reverb, delay, chorus, etc. In this way, effects are easily found and selected by category rather than scrolling through a long list of different types of effects.

To select an actual effect within a given category, you should press the CURSOR > key to move to the EFFECT list:



You may now select an effect and assign it to the selected FX channel using RECALL [F3].

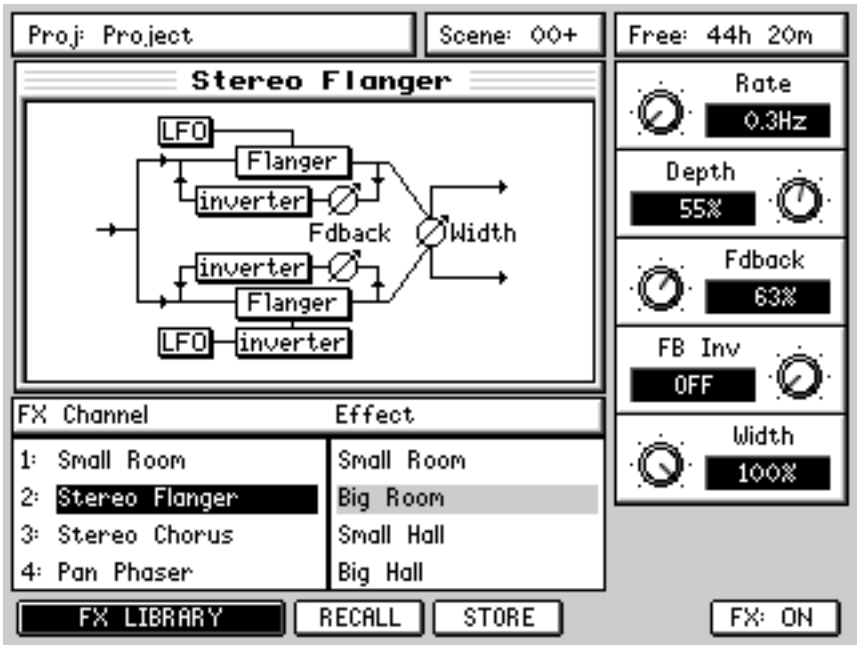
It is possible to delete effects using the DELETE key [F3].

It is possible to rename effects using the RENAME key [F4].

It is possible to copy (and store) effects using the COPY key [F5].

> ***NOTE :*** *It is not possible to delete, rename and/or copy effects categories. Neither is it possible to delete or rename preset effects types.*

Pressing EXIT will return you to the main FX page. The effect assigned in the FX LIBRARY page will be shown on the selected channel:



EFFECTS SEND/RETURN LEVELS

Effects levels are governed by the amount sent to them via the FX sends on each channel. The MASTER FX/AUX SEND levels, however, are set in the MASTER channel's CHANNEL view page in the MIXER mode (they can also be adjusted using the default assignments in the USER BANK on Channels 1-4 (internal FX) and Channels 5-8 (AUX sends)).

The FX RETURNS (by default) appear on channels 9-12 of the GROUP/FX fader bank and can have their levels automated and they may be muted and solo'd as on any other channel. They can also be configured to use the FX/AUX sends so that effects can be sent to effects to create effects chains. However, they cannot be EQ'd. If you want to EQ (or otherwise process an effects return), the outputs of the effects channel should be patched to the inputs (see the description of the PATCH pages).

SETTING UP MULTI-EFFECTS

Although some effects are multi-effects (chorus+delay, for example), these are essentially quite simple - useful but basic. However, it is possible to set up complex multi effects by sending FX returns to other FX channels. For example, with the following combination of effects...

FX1	Chorus
FX2	Phaser
FX3	Ping-Pong Delay
FX4	Large Hall

By sending a proportion of FX1 RETURN to FX2 (i.e. via FX2 send on the FX1 RETURN channel), you can add some phasing to the chorused sound. By sending a proportion of FX2 RETURN to FX3, echo can be added to that and by sending a proportion of FX3 RETURN to FX4, reverb can be added. With combinations of pre- and post-fade sends, a great deal of flexibility is offered.

However, please note that the sends for the FX RETURN channels need to be configured to do this because, by default, to conserve mixer resources, the FX SENDS on the FX RETURNS are disabled.

RECORDING EFFECTS

To actually record something with effects (i.e. commit the effects to disk during the track laying process), route the appropriate effects return channel to disk via the groups just like any normal channel. For example, to record a pad sound coming in on Channel 4 with stereo chorus and reverb to Track 7/8....

1. Use FX1 and 2 sends to send a proportion of Input 4 to FX1 and 2 set up as chorus and reverb respectively. Route Input 4 to Group 7/8

2. In the GROUP/FX fader bank, route FX RETURN 1 and 2 to Group 7/8 as well (you might also like to send a bit of FX 1 RETURN to FX2 so that the chorus has a hint of reverb too). Balance the FX return against the 'dry' signal on Input 4.

3. Select Tracks 7/8 for record....

Input 4 AND the FX RETURNS will be recorded to tracks 7/8.

ADDING EFFECTS TO A CONTROL ROOM MONITOR MIX

Very often, vocalists like to hear reverb on their vocals during the track laying process in order to have their performance 'flattered'. However, it's not a good idea to commit the reverb to disk at that stage. To record a vocal coming in on Input 1 to Track 4 dry but with reverb 'monitoring'...

1. Route Input 1 to Group 4, select Track 4 for record.

2. Monitor the vocal line via Disk Channel 4.

3. Add a hint of reverb to Disk Channel 4. Route that reverb's FX RETURN to the stereo L/R bus....

The vocal will be recorded 'dry' but the vocal reverb will be heard on the control room monitors and headphone output.

ADDING EFFECTS TO A FOLDBACK MIX

Similarly, vocalists working in a vocal booth like to hear their voice with reverb in their headphones during the track laying process.

Using the same example as above and assuming AUX 3 and/or 4 are being used as pre-fade foldback mix outputs to the STUDIO outputs connected to a suitable headphone monitoring system....

1. Route Input 1 to Group 4, select Track 4 for record.

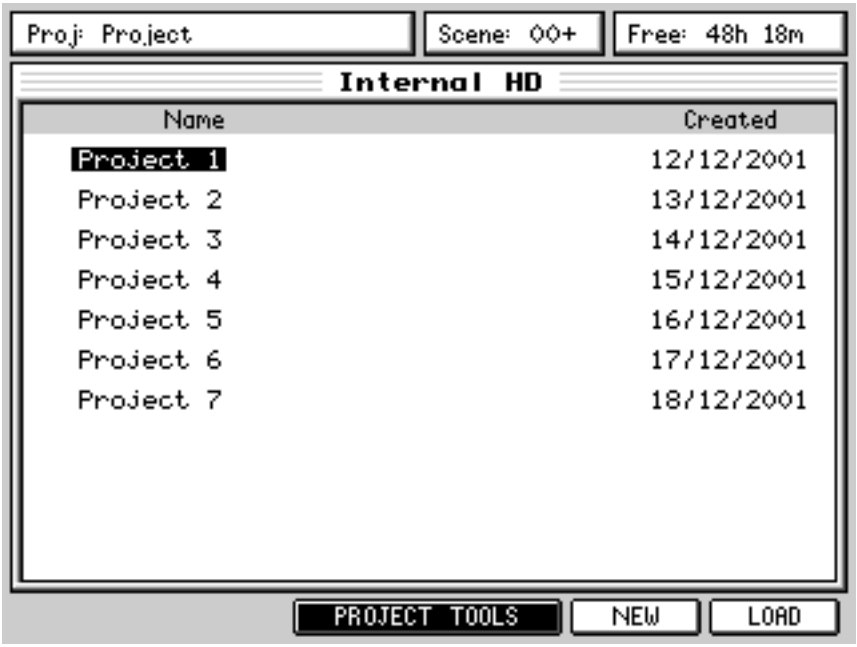
2. Monitor the vocal line via Disk Channel 4.

3. Add a hint of reverb to Disk Channel 4 but send the FX1 RETURN through pre-fade AUX 3/4...

The dry signal will be recorded to disk, the vocalist will hear the backing track and his vocal via AUX 3/4 through the STUDIO outputs - he will also hear reverb on his vocal.

PROJECT MODE

Pressing PROJECT shows this screen:



Here, you can see a list of projects which may be loaded into the DPS24. The list also shows the date it was created.

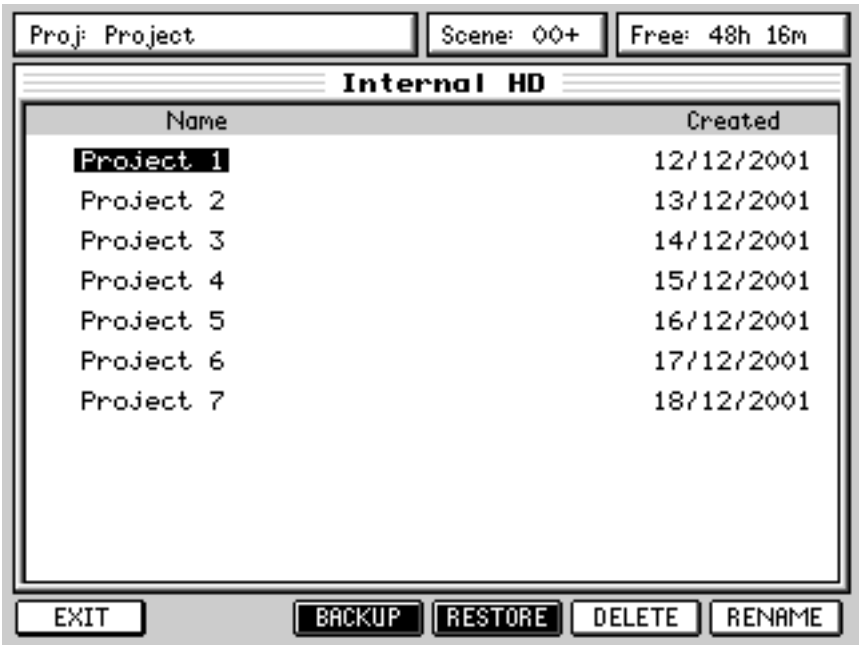
To load a project, simply use the CURSOR UP/DOWN keys to select the project and press LOAD [F6]. The project will be loaded and you will receive a confirmation pop-up.

CREATING NEW PROJECTS

It is also possible to create a new, empty project from scratch. To create a new project, simply press NEW [F5]. You will receive the usual naming prompt and you can enter a 16 character name of your own choosing. Press CREATE [F6] to complete the action. You will be taken to the MAIN SCREEN where you will see the new, empty project ready for recording into.

MANAGING PROJECTS

In the main PROJECT page, the PROJECT TOOLS key provides access to various 'project management' functions:



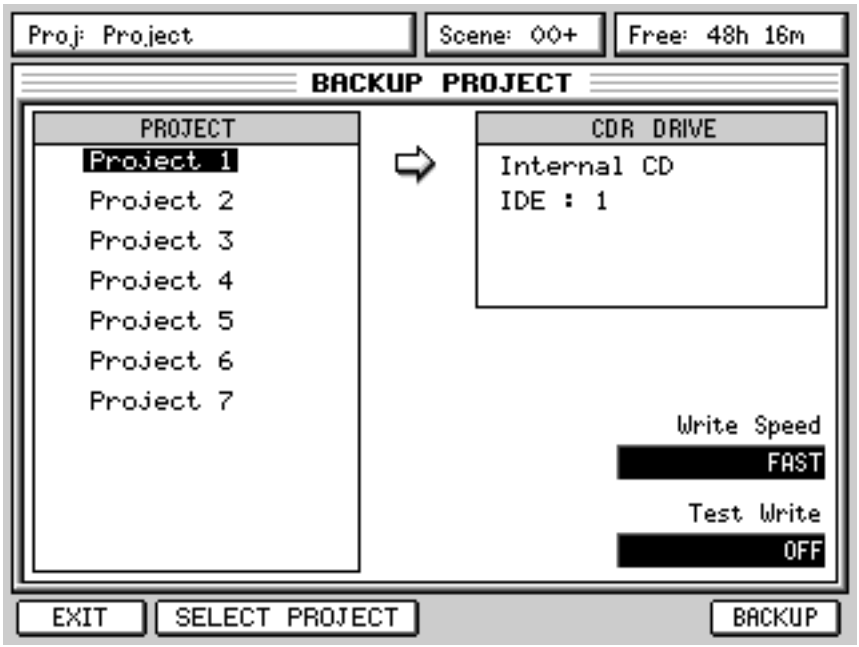
Here, you can backup, restore, delete and rename projects.

To rename a project, use the CURSOR UP/DOWN keys to select the project to rename. Pressing RENAME will pop-up the usual naming prompt and you can rename the selected project in the usual way. Press RENAME [F6] at this prompt to confirm and commit the rename (or press CANCEL to abort).

To delete a project, use the CURSOR UP/DOWN keys to select the project to delete. Pressing DELETE will pop-up a prompt asking you to confirm the deletion. Press DELETE [F6] at this prompt to confirm the deletion (or press CANCEL to abort).

BACKING UP PROJECTS

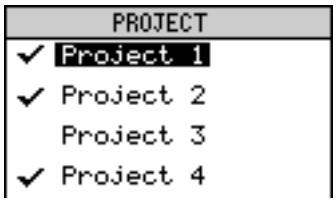
Pressing BACKUP will show this screen:



You should use the CURSOR UP/DOWN keys to select the project(s) you want to back up and you should press SELECT PROJECT [F2/3] to 'mark' the files. The project(s) will be marked thus:

✔ Project 1

Multiple projects may be selected in this way for backup in one pass. E.g.:



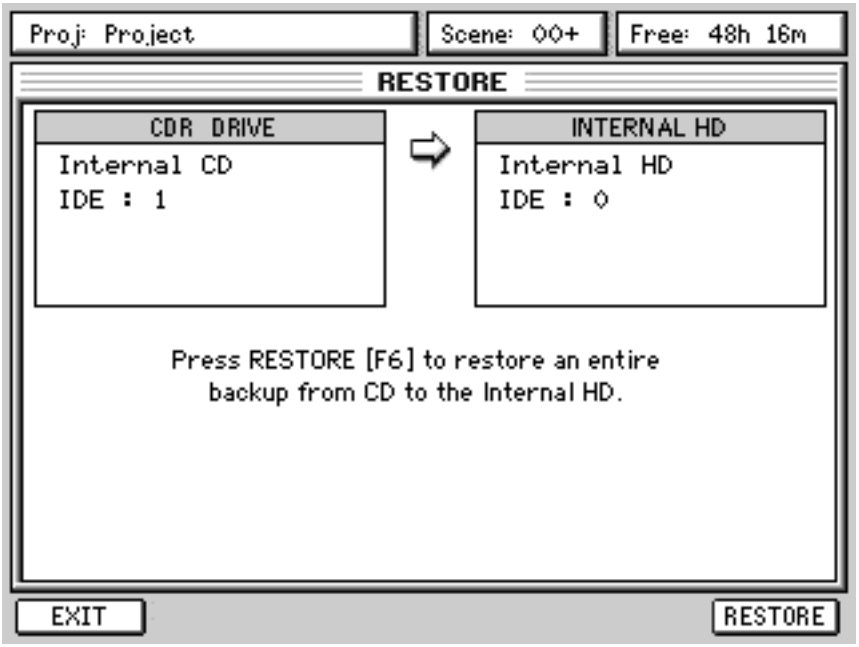
Before making the backup, you should set WRITE SPEED to the correct speed (SLOW if your CD-R/CD-RW is an older model, FAST if it is a later model) using Q5. You can also select whether the drive will perform a TEST WRITE, a process in which a weak laser is projected onto the disc surface to check whether any malfunctions will occur during data transfer. If you have not written data to discs at all or, with a CD-RW, have only done so a few times, you should ideally perform the test write process. However, the selection is optional.

When you have selected the project(s) you want to backup and set the CD writing parameters as appropriate, press BACKUP [F6]. The backup process will commence and you will see a progress display.

If the total backup size is larger than the capacity of a CD, you will be prompted to insert blank CDs as required.

RESTORING PROJECTS

Pressing RESTORE shows this screen:



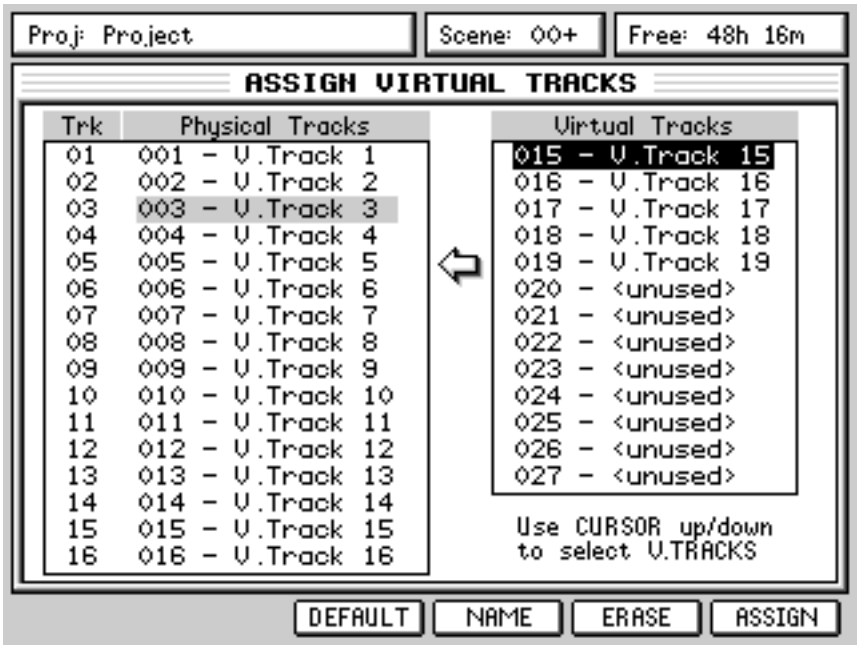
This page allows you to restore a backup onto the Internal HD.

To restore a backup, press RESTORE [F6]. You will receive an “ARE YOU SURE” prompt and you should respond accordingly. If you proceed, you will see a progress display.

If the backup exists across several CDs, you will be prompted to insert the appropriate CD during the backup process.

VIRTUAL TRACKS

Pressing SHIFT+PROJECT gives access to the 'virtual' tracks function:

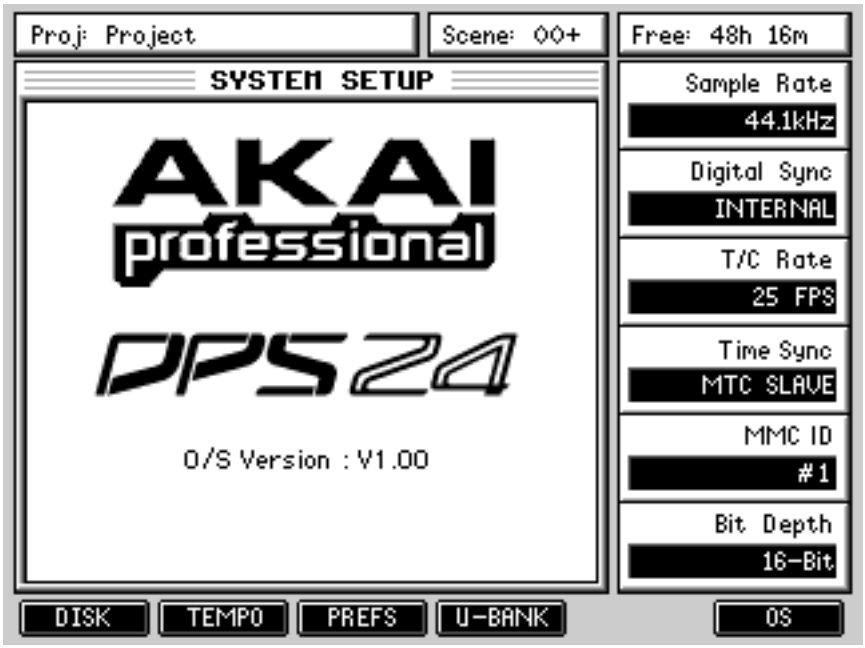


To assign a virtual track to a 'physical' track, first select the 'physical' track you wish to replace using the CURSOR UP/DOWN keys. Once the track you want to replace is selected, press CURSOR > to move to the list of VIRTUAL TRACKS and use the CURSOR UP/DOWN keys to scroll through them. When you find the virtual track you want to use, press ASSIGN to assign that virtual track to the physical track.

Physical and virtual tracks can be named/renamed and/or erased. At any time, you can revert to the original 'physical' recordings by pressing DEFAULT - this will restore the original track(s).

SETUP MODE

The SETUP page allows you to set certain functions that affect the DPS24 as a whole. Pressing SETUP shows this page:



Here, you can set the following functions using Q1-Q6:

SAMPLE RATE — Here, you can set the sample rate for the DPS24. The options are 32kHz, 44.1kHz, 48kHz and 96kHz.

> ➳ ***NOTE :*** *Selecting a sample rate other than that of the currently loaded project will cause previously recorded material to playback at the wrong speed. It is recommended, therefore, that you do not change the 'system' sample rate after loading a project or after recording into a new project.*

DIGITAL SYNC — Selects the wordclock source. The options are:

- INTERNAL — The DPS24 will sync to its own internal clock
- WCLK — The DPS24 will sync to a sync source connected to the Wordclock BNC connector on the rear of the DPS24.
- SPDIF — The DPS24 will sync to a digital audio source connected to the coaxial digital input on the rear of the DPS24.
- ADAT 1-8 — The DPS24 will sync to a digital audio source connected to the optical digital input on the rear of the DPS24.

External wordclock should match the sampling rate set for the current project.

> ➳ ***NOTE :*** *If the selected digital sync source is not available, you will receive a prompt informing you. Also, to prevent unwanted noise, all audio is automatically muted and the top of the LCD will show:*
>
>
>
>
> *Certain operations will also be unavailable to you on the DPS24.*
>
> *To remedy this situation, you should either select INTERNAL or you should attend to the digital sync source's problem.*

T/C RATE — Sets the T/C rate. The options are EBU 24, SMPTE 25, SMPTE 29.97, SMPTE 29.97D, SMPTE 30 and SMPTE 30D

The T/C RATE should match any incoming external timecode. If it does not, synchronisation will slip.

TIME SYNC — This sets how the DPS24 will behave with respect to receiving and/or generating timecode. The options are:

- MTC SLAVE — The DPS24 will follow external MIDI timecode allowing it to synchronise to external sequencers, drum machines, etc.
- MTC MASTER — The DPS24 will generate MIDI timecode allowing sequencers, drum machines, etc., to follow the DPS24.
- MIDI CLK OUT — The DPS24 will generate MIDI clock with Song Position Pointer to act as a master controller for external sequencers, drum machines, etc.
- SMPTE SLAVE — The DPS24 will follow external SMPTE timecode via the optional SMPTE card.

➳**NOTE 1 :** *The TIME SYNC options are enabled/disabled using the EXT. SYNC key.*

➳**NOTE 2:** *The SMPTE board (if installed) always generates SMPTE timecode during playback.*

MMC ID — This sets the MIDI Machine Control (MMC) ID for the unit. This should match the ID of your external MIDI device.

The ID of the device that transmits MMC should match the DPS24's MMC ID so that you can control the DPS24's transport via MMC. Please refer to the manual that came with the external device or software for more information on setting the device ID.

BIT DEPTH — The options are 16-bit or 24-bit. This sets the bit-depth for any subsequent recordings you make. A project can contain recordings made at different bit depths.

These and other SETUP settings are saved to disk as part of the current project and will subsequently be recalled when that project is loaded.

The soft keys on the main setup page are:

DISK — Takes you to pages where you can manage your disk drive(s) with functions such as formatting, copying, etc.

TEMPO — Takes you to a page where you can set tempo maps. This functionality is only really necessary if you are synchronising an external sequencer to the DPS24 and need to have tempo changes in the song.

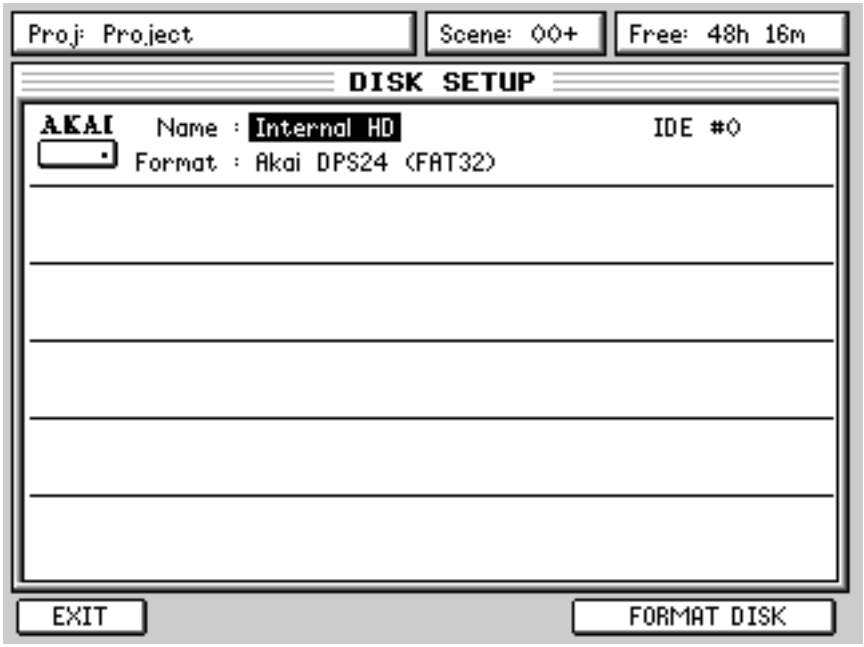
PREFS — This takes you to a page where you can set certain preferences.

U-BANK — Takes you to a page where you can set up the USER BANK of faders.

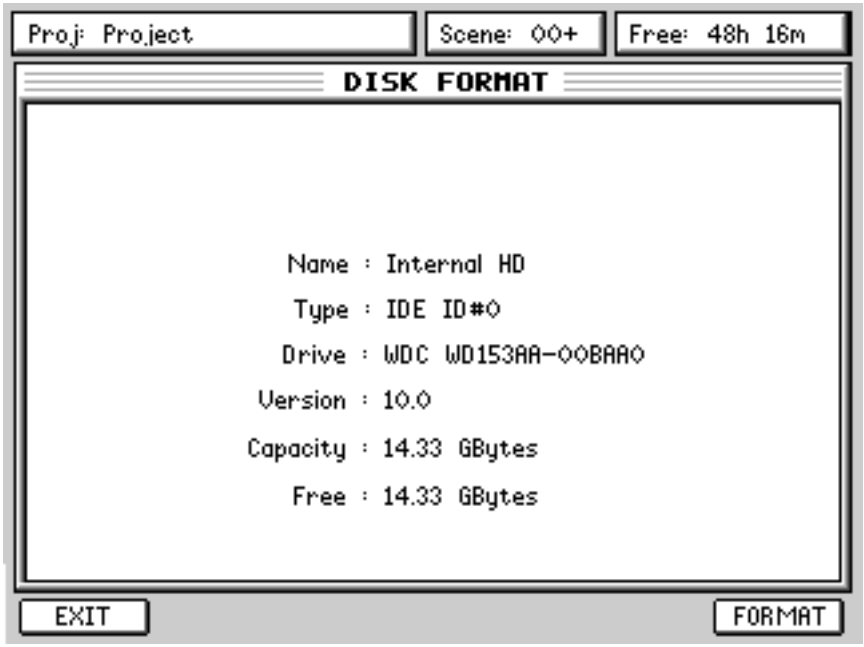
OS — This takes you to a page where you can update the DPS24's operating system software.

DISK

The DISK page allows you to format the internal disk drive. Pressing DISK will show something like this screen:



Pressing FORMAT DISK will show something like this screen:



Details of the drive will be shown. If you change your mind, press EXIT otherwise....

Pressing FORMAT [F6] will show this prompt:

FULL FORMAT will format the disk and will also perform a disk surface test checking for (and marking) bad blocks. It will erase all data from the drive. Depending on the size of your drive, this can take a long time.

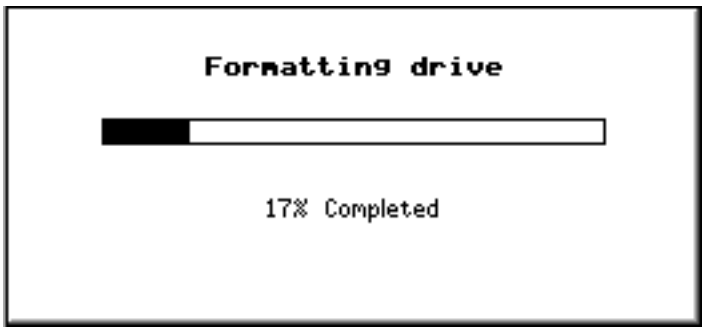
QUICK FORMAT also formats the disk but because it does not do the lengthy surface test, it is relatively fast. It should only be done if the drive is known to be error free otherwise the DPS24 might try to use bad blocks on the disk. If you are at all doubtful, a FULL FORMAT is recommended to prevent potential errors later on.

IMPORTANT NOTE

Both format functions will erase the selected disk drive.

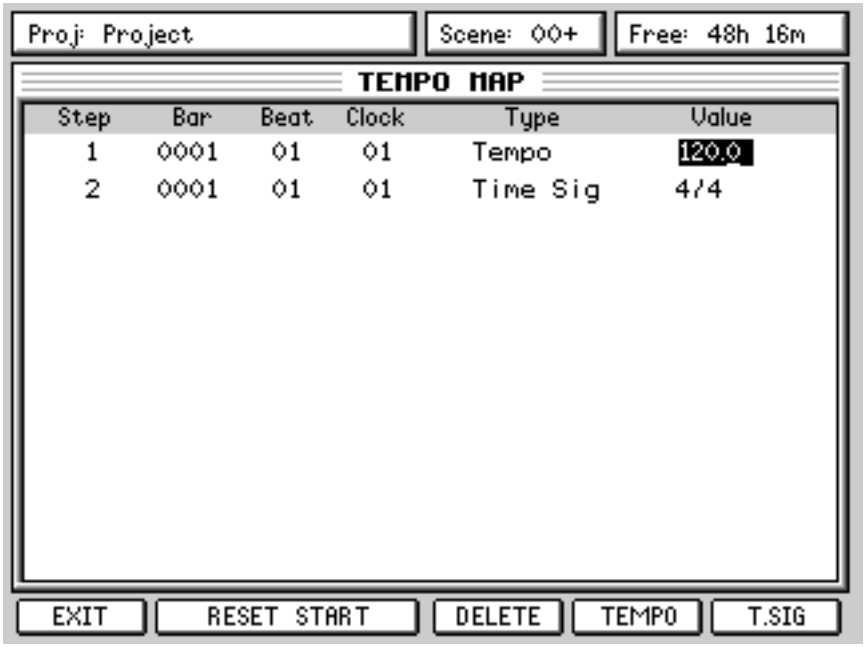
****** THERE IS NO UNDO FOR EITHER FORMAT FUNCTION ******

Pressing either format function will issue a further “ARE YOU SURE?” prompt. You should respond as appropriate but please proceed with caution. If you choose to format the selected drive, you will see a progress bar:



TEMPO MAPS

Pressing TEMPO in the main SETUP page takes you to this page:



Here, you can set up a 'tempo map' so that a sequencer that is being synchronised to the DPS24 can follow time signature and/or tempo changes.

You will see that there is a tempo and time signature entry at the start of the song. These determine the map's starting tempo and cannot be deleted. You may edit them, however, to something more suitable simply by moving to the VALUE field and entering the tempo and time signature.

The first thing you should do when creating a tempo map is identify the start of the song and reset the start time so that the song starts at Bar 1, Beat 1, Clock 1. Locate to the start of the song and carefully jog over it until you have the exact start point. Now press RESET START. All tempo changes and/or time signature changes you enter into the map will now be referenced to that song start point.

After that, to add more steps to the map, first play/spool/jog/whatever to the point where you want the first change to be and press either T.SIG (to add a time signature) or TEMPO (to add a tempo change). No prompts are issued - an event is simply inserted. If you add an event accidentally, simply press DELETE (F4).

➳***NOTE 1:*** *Because time signature changes can only occur at the start of a bar, adding a time signature event will place it at the nearest bar boundary.*

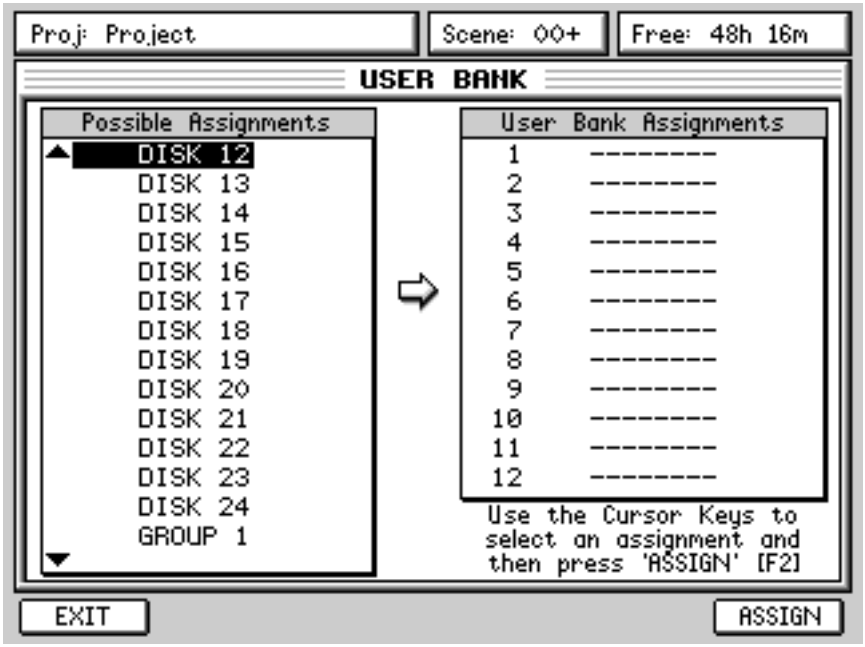
➳***NOTE 2:*** ***I****t is not possible to have several time signature/tempo changes at the same time. This is mentioned because you may attempt to enter a time signature/tempo change and nothing appears to happen. Chances are that a change even already exists at that time.*

The cursor will automatically be placed on the step you have just created and you may edit its value (the default step value for tempo is 120.0 BPM and for time signature it is 4/4 - these should be edited as appropriate).

Continue adding tempo changes and new time signatures as you need through the project.

USER BANK

Pressing U-BANK in the main SETUP page will show this screen:



Here you can assign any channel to the 12 ‘user channels’. This is useful as it allows you to have important channels conveniently available in one bank so that you have access to those channels quickly without having to switch banks all the time. This bank can also be used for MIDI mixing of external sound modules, samplers, etc., and could also be set up to provide dedicated master FX/Aux sends which are not directly available on the panel.

To assign a channel to a user channel, use CURSOR UP/DOWN to move the cursor to the channel you want to assign. Now press CURSOR > to move to the USER BANK ASSIGNMENTS column and use CURSOR UP/DOWN to select the USER BANK channel. Now press ASSIGN [F2]. Repeat as necessary for other channels.

> ***NOTE :*** *When an assignment is made, the cursor moves to the next channel making it ready to assign.*
>
> *Also, to select channels for assignment quickly, a shortcut is to press the appropriate channel’s SELECT key on the front panel.*

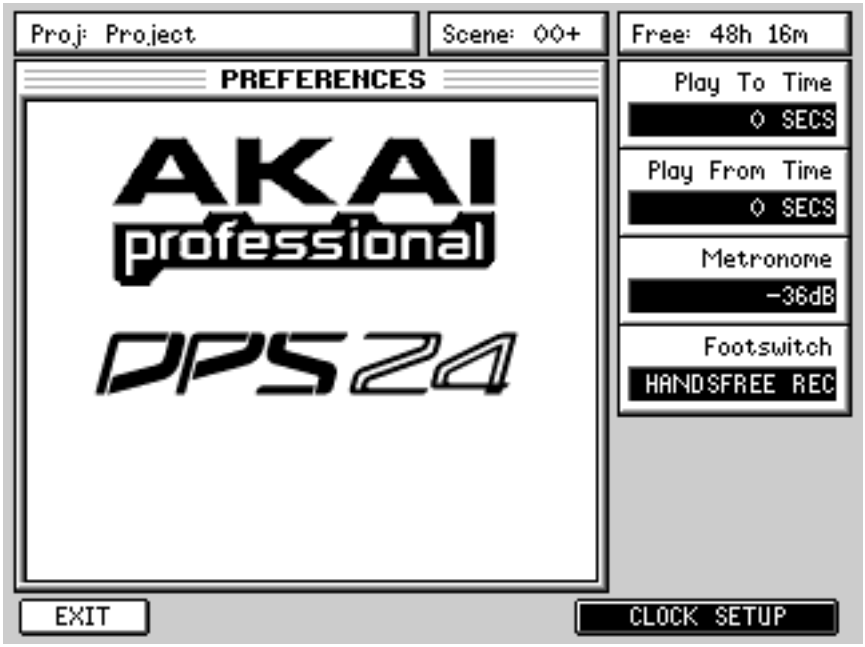
It is possible to assign the following to any given channel:

INPUT 1-12
TRACKS 1-24
GROUPS 1/2 - 7/8 (*)
FX SEND 1-4 (*)
AUX SEND 1-4 (*)
FX RETURN 1-4
AUX INPUT L/R (*)
MIDI CONTROLLER 1-16 (*)

(*) Pan, EQ and effects sends are not available on these channel assignments.

PREFERENCES

Back in the main SETUP page, pressing PREFS takes you to this page:



The options are:

PLAY TO — Sets the 'pre-roll' time for the PLAY TO key. The PLAY TO range is 0-99 seconds.

PLAY FROM — Sets the 'post-roll' time for the PLAY FROM key. The PLAY FROM range is 0-99 seconds.

> ***NOTE :*** *PLAY TO time + PLAY FROM time = PLAY OVER time.*

METRONOME — Sets the level of the metronome function.

FOOTSWITCH — Allows you to select the function of the footswitch input. The options are:

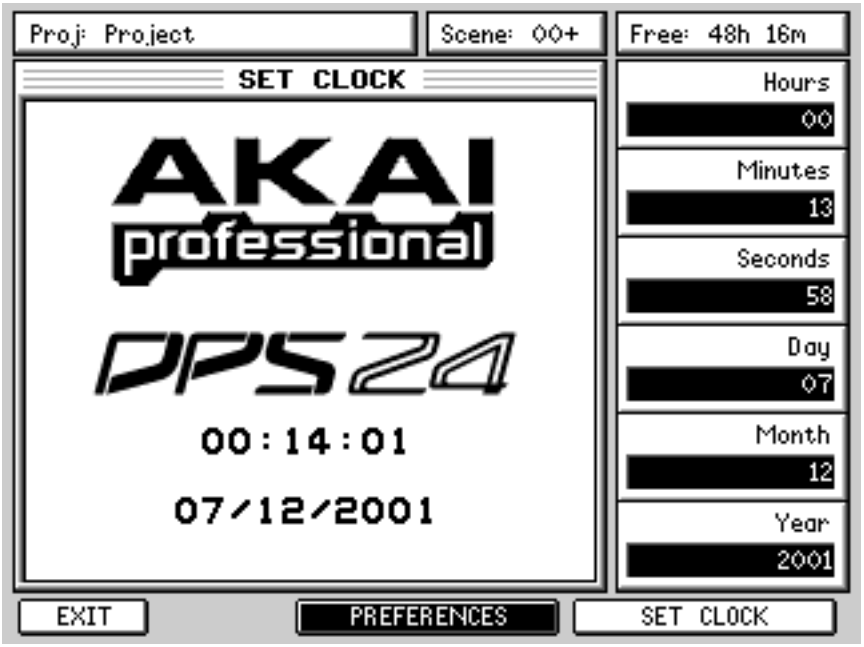
- HANDSFREE REC — The footswitch can be used for playing, stopping and dropping in and out of record (as on the DR8/16). Pressing the footswitch once will cause the DPS24 to play, pressing it again will cause it to drop into record on the selected track(s). Pressing it again will cause it to drop out of record and pressing it again will stop playback.
- PUNCH IN/OUT — When the DPS24 is playing, pressing the footswitch once will drop into record on the selected track(s) and pressing it again will cause it to drop out of record. Pressing it again will drop into record again and pressing it again will drop out. And so on.
- PLAY/STOP — Allows you to start and stop playback using the footswitch.
- ADAT LRC — Allows you to use an ADAT LRC as a simple remote.

The function keys are:

EXIT	Returns you to the main SETUP page.
SET CLOCK	Takes you to a page where you can set the DPS24's internal clock (described below).

SET CLOCK

Pressing SET CLOCK in the PREFERENCES page shows this screen:

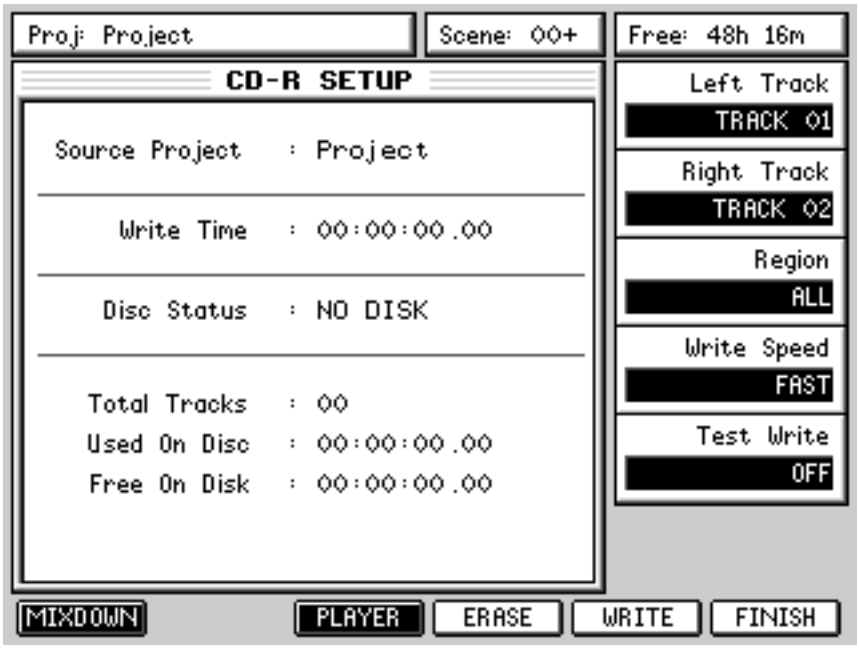


Using Q1-Q6, you can set the time and date. The new settings become active when you press SET CLOCK (F5/6).

You can return to the PREFS page by pressing PREFERENCES [F3/4] and you can exit back to the main SETUP page by pressing [F1].

CD-RECORDER

The SETUP key's SHIFT function is CD-R and shows you this screen:



The large window on the left shows general information. None of the parameters are editable but are:

SOURCE PROJECT — Shows the currently selected project. To select another to record to CD, load the appropriate project in the PROJECT mode.

WRITE TIME — Shows how long it will take to record the source project to CD.

DISC STATUS — The Finish process is a process of writing readout information to a disc. NOT FINISHED appears if the Finish process has not been performed. FINISHED appears if the Finish process has already been performed. NO DISC appears if no disc is inserted in the drive.

TOTAL TRACKS — Displays the total number of tracks on the CD.

USED ON DISC — Indicates the total time recorded on the CD.

FREE ON DISC — Indicates the total time free for recording on the CD.

To the right are parameters that can be adjusted using the Q-Link controls. They are:

LEFT TRACK — Selects which track of the source project will be recorded as the left track on the CD. You may select any disk track 1-24.

RIGHT TRACK — Selects which track of the source project will be recorded as the right track on the CD. You may select any disk track 1-24.

REGION — Selects which portion of the selected tracks will be recorded to the CD-R/CD-RW. The options are IN/OUT or ALL.

WRITE SPEED — Specify the writing speed here. You may select SLOW or FAST. SLOW writes at normal (real-time) speed. FAST, however, does not necessarily write at the CD-RW/CD-R's fastest speed but at the highest mutually compatible speed. This is likely to be slower than the CD's fastest possible speed (e.g. if you have a 24x speed writer, the FAST setting might only write at 4x speed).

TEST WRITE — This allows you select whether or not to perform test writing. Test write is a process in which a weak laser is projected onto the disc surface to check whether any malfunctions will occur during data transfer. If you have not written data to discs at all or have only done so a few times, perform the test write process.

➳**NOTE :** *It is not possible to mixdown directly to CD-RW/CD-R. To do this, you should first use the MIXDOWN function to create a stereo mixdown and then burn that stereo mix to CD. This process is described on the following pages.*

The soft key functions are:

MIXDOWN — Takes you to a page where you can create a stereo mixdown suitable for writing to CD-R.

CD PLAYER — Takes you to the CD PLAYER page.

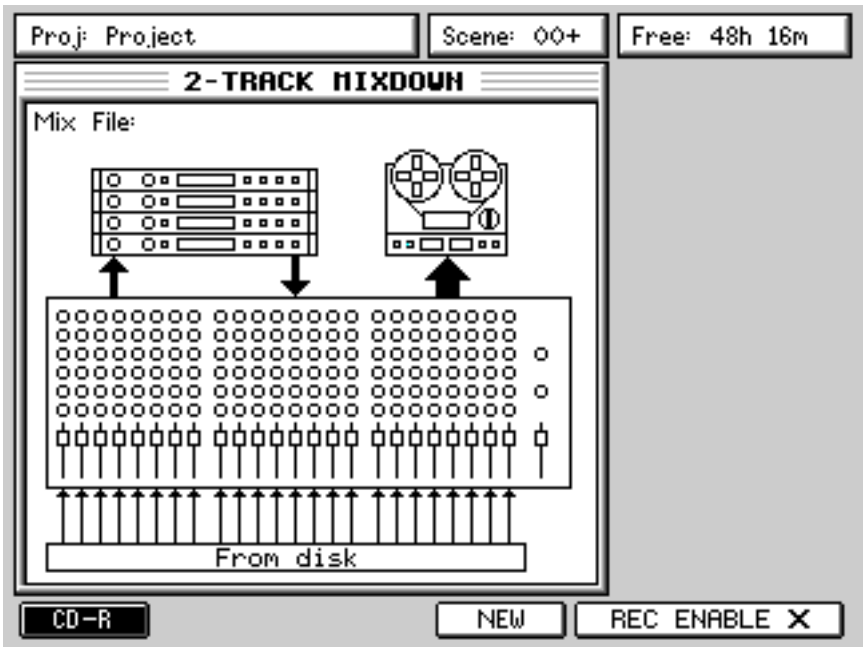
WRITE — Initiates the writing process. Pressing this pops up an “ARE YOU SURE?” prompt to which you should respond accordingly.

ERASE — Allows you to erase a CD-RW for re-use. Pressing this pops up an “ARE YOU SURE?” prompt to which you should respond accordingly.

FINISH — This allows you to complete a CD-R/CD-RW so that it can be played on a compatible audio CD player. Pressing this key puts up an “ARE YOU SURE?” prompt to which you should respond accordingly.

MIXING DOWN

It is not possible to mixdown directly to CD-R so first, you should make a stereo mix to the DPS24’s ‘virtual 2-track’. This is done in the MIXDOWN page:



The graphic in the window represents what is happening - you are mixing down up to 24 channels of disk tracks through the stereo L/R bus to a 2-track machine (albeit a ‘virtual’ one) and you can use the four effects channels. What isn’t shown is that it is also possible to mix external inputs during the mix process using Inputs 1-12 and also that channels may be sub-grouped to the stereo L/R bus for sub-mixing.

To make a mix down, first select the completed project you want to mixdown and locate to its start. Now, in the MIXDOWN page, press NEW [F5] and enter a name for your stereo mixdown file. Next, press REC ENABLE [F5/6]. You are now set up to mixdown.

ENSURING THAT NO DISK TRACKS ARE ENABLED FOR RECORD.....

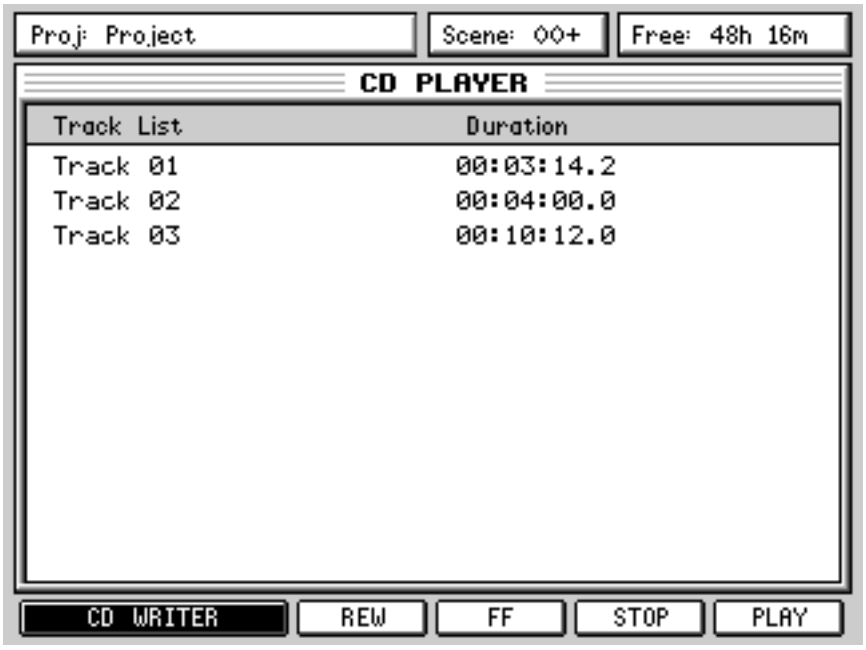
Press PLAY and RECORD to record your stereo master mixdown. At the end of the mixdown, drop out of record in the usual way.

In the PROJECT mode, you will see your new mixed project listed in amongst the rest. Select and load that project. What you will see is a 24-track project that uses just tracks 1 and 2 which contain your stereo mixdown (left channel on track 1; right channel on track 2). To record this to CD-R, in the CD-R page described on the previous pages, you should select TRACK1 for the LEFT TRACK and TRACK 2 for RIGHT TRACK. Now press WRITE - your stereo mix will be written to the CD.

This method may seem convoluted but there are good reasons for it. Firstly, it allows you to try several different mixes of each project before committing to CD. Also, it allows you to edit the master mixdown in the usual way just like any multi-track project.

CD PLAYER

Pressing CD PLAYER (F1/2) shows this screen:



Here you can play tracks recorded on the CD-R/CD-RW using a simple user interface.

Use the CURSOR UP/DOWN keys to select a track to play and use the CD player's 'transport' keys on F3-F6 to play, stop, pause or rewind/fast forward through tracks on the CD.

When a track is playing, you can skip to the next using the CURSOR UP/DOWN keys which will cause playback to skip to the next track. During playback, you can use the rewind and fast forward keys to 'stutter' through a track.

When a track is playing, the status of F6 changes slightly:

PLAY	When idle, F6 is a 'play' key.
PAUSE	During playback, F6 becomes a pause control.

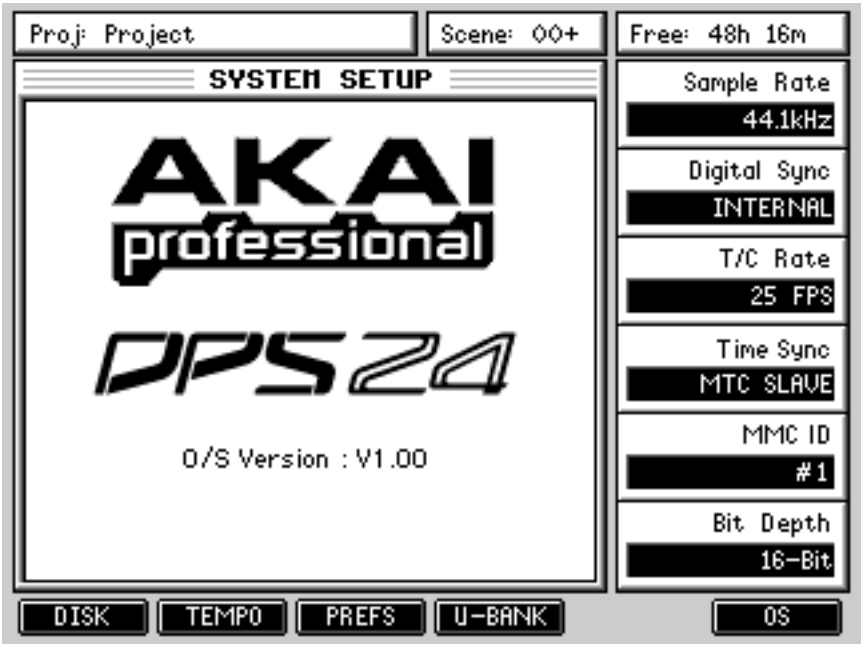
> ➳**NOTE :** *It is not possible to play the CD through the DPS24's monitoring system. You can listen to it on the CD-RW's headphone socket (if the model installed has one, of course) but, ideally, to hear the CD you have created, you should take it to a compatible CD player.*

You can return to the CD-WRITER at any time by pressing F1/2 [CD WRITER].

EXT SYNC KEY

To synchronise the DPS24 to external timecode, the EXT SYNC key should be pressed:

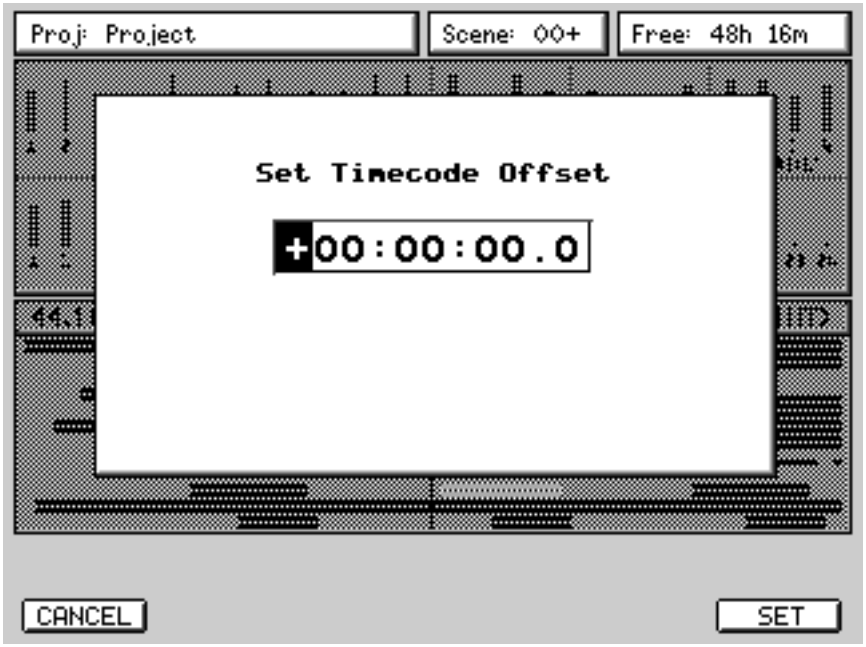
The DPS24 will now only play upon reception of external timecode. The timecode rate is set using Q3 in the SETUP page:



Also, the T/C SOURCE should be set as appropriately (although, unless the optional SMPTE board is fitted, MIDI MTC IN is the only source for external MTC).

SETTING EXT SYNC OFFSETS

Pressing SHIFT+EXT SYNC allows you to set a timecode offset. This prompt appears on the LCD:



The first digit is highlighted and you should enter a value from the numeric keypad as appropriate. To set the 'sign' (i.e. + or -), move the cursor to the sign and press '+' or '-' on the numeric keypad as appropriate. Once an offset has been entered, press SET [F6].

MIDI Implementation Chart

Date: 12/01

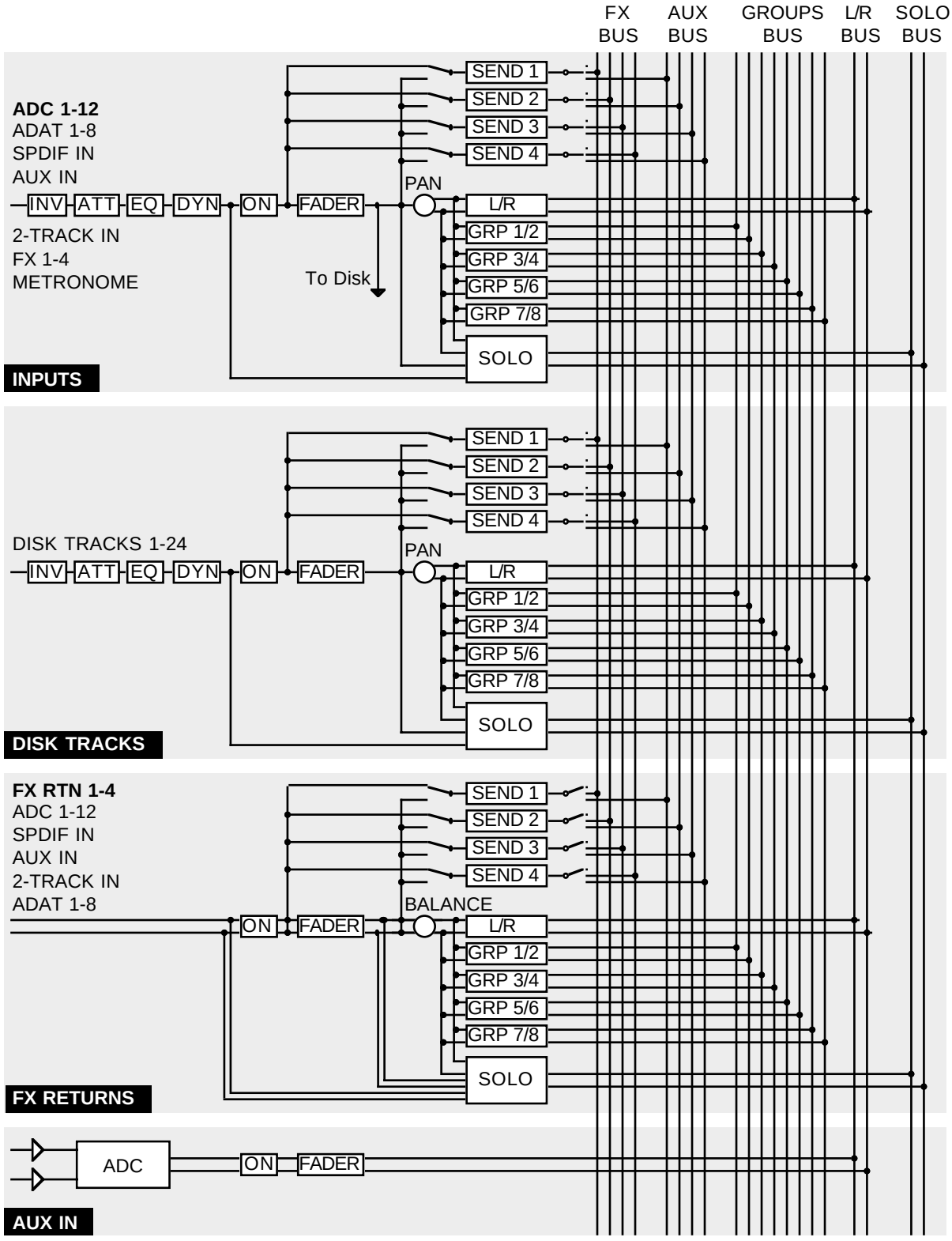
Model DPS24 Version: 1.0

Function		Transmitted	Recognized	Remarks
Basic channel	Default	X	X	
	Changed	X	X	
Mode	Default	X	X	
	Messages	X	X	
	Altered	**********		
Note		X	X	
Number:	True Voice	**********		
Velocity	Note On	X	X	
	Note Off	X	X	
After Touch	Key	X	X	
	Channel	X	X	
Pitch Bend		X	X	
Control Change		X	X	
Program	Setting Range			
Change	OFF, 1 ~ 16, OM	**********	X	
System Exclusive		O (*1)	O (*3)	MTC, MMC
System Common	: Song Position	O	X	
	: Song Select	X	X	
	: Tune	X	X	
System Real Time	: Clock	O (*2)	X	
	: Command	O		Continue, Stop, Start
Aux Messages	: Local On/Off	X	X	
	: All Notes Off	X	X	
	: Active Sense	X	X	
	: Reset	X	X	
Notes		(*1) MTC is transmitted only in MTC OUT mode. (*2) SSP and CLOCK. (*3) MMC System Exclusive is supported.		

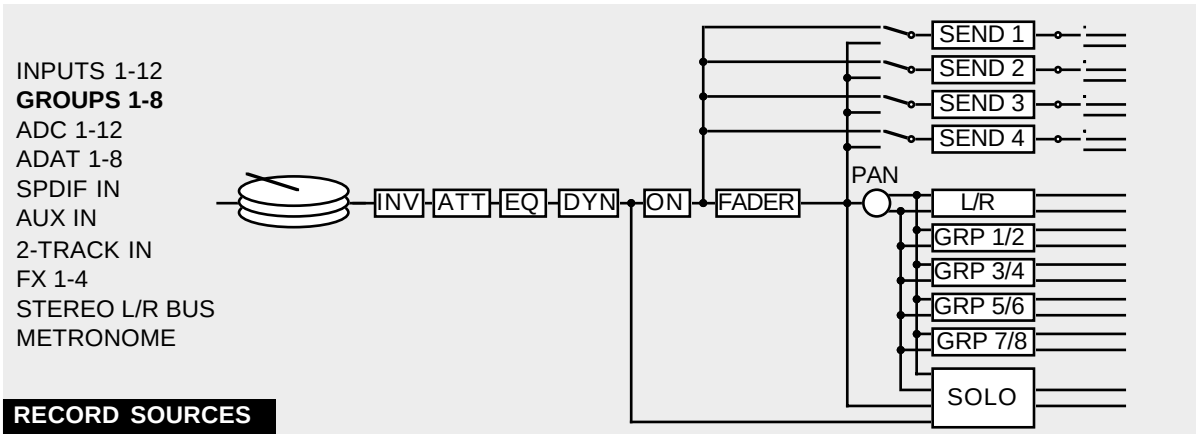
Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO O: Yes

Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO X: No

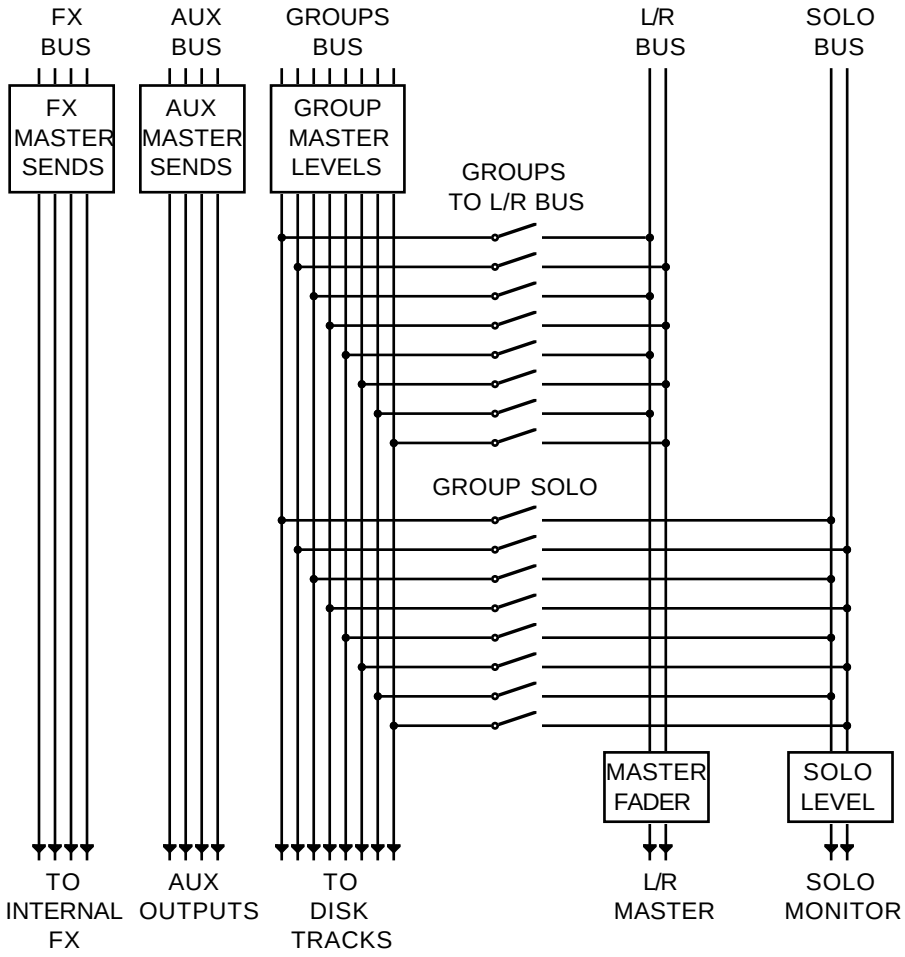
Block Diagrams



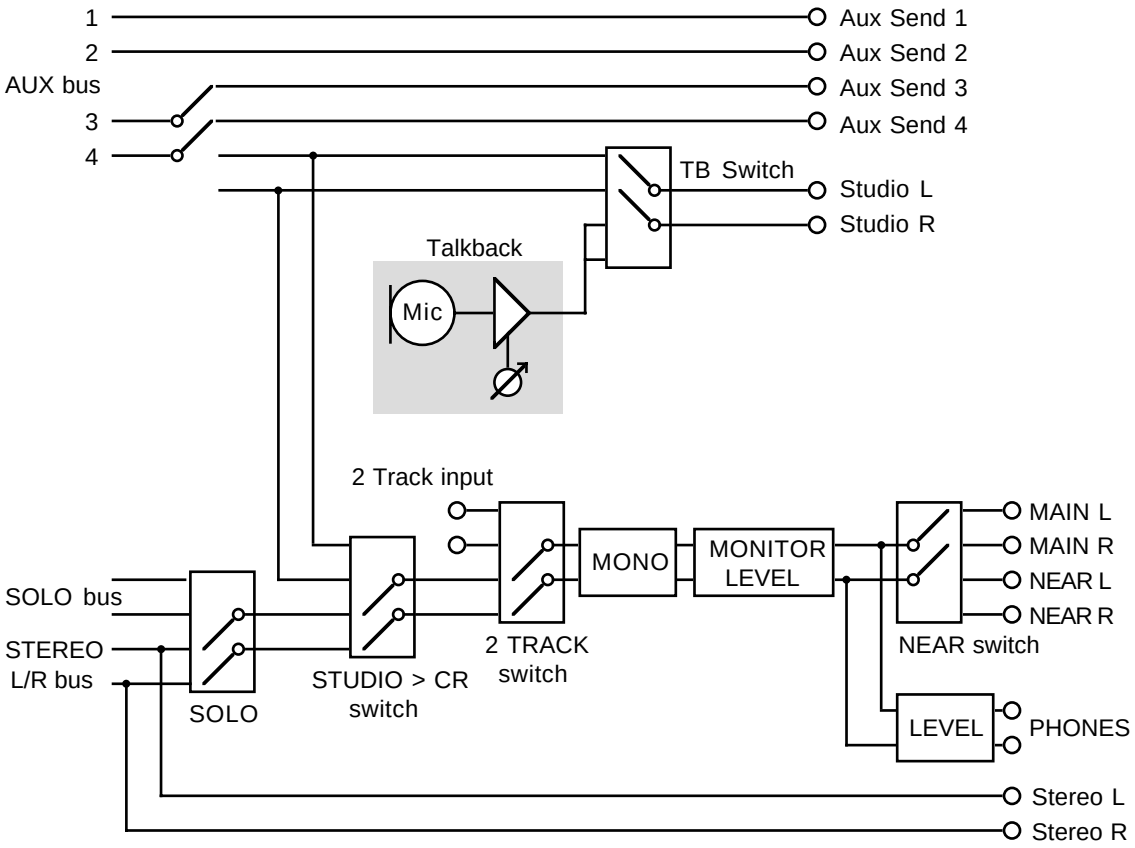
The default channel sources are shown in bold text.



RECORD SOURCES



BUSSES

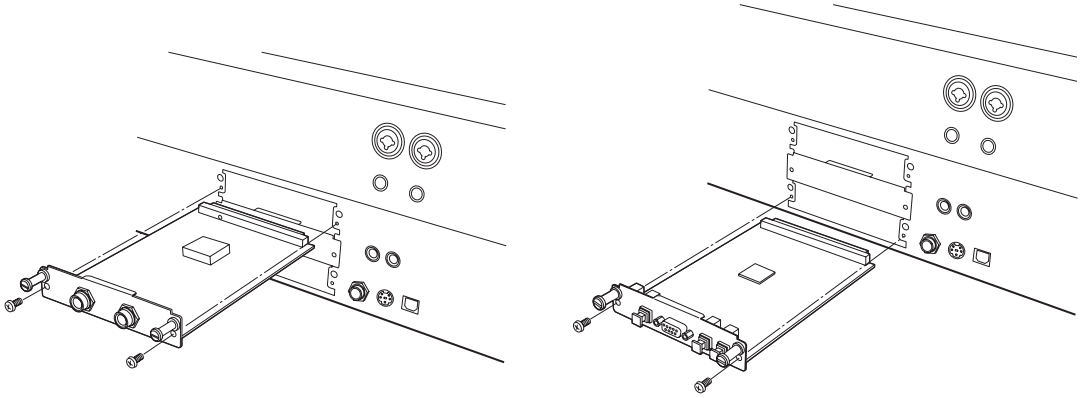

1
2
AUX bus
3
4
Aux Send 1
Aux Send 2
Aux Send 3
Aux Send 4
TB Switch
Studio L
Studio R
Talkback
Mic
2 Track input
MONO
MONITOR LEVEL
MAIN L
MAIN R
NEAR L
NEAR R
NEAR switch
SOLO bus
STEREO L/R bus
SOLO
STUDIO > CR switch
2 TRACK switch
LEVEL
PHONES
Stereo L
Stereo R

OUTPUTS

Installation of Options - To Service Technicians

IB-24LTC/IB-24ADT

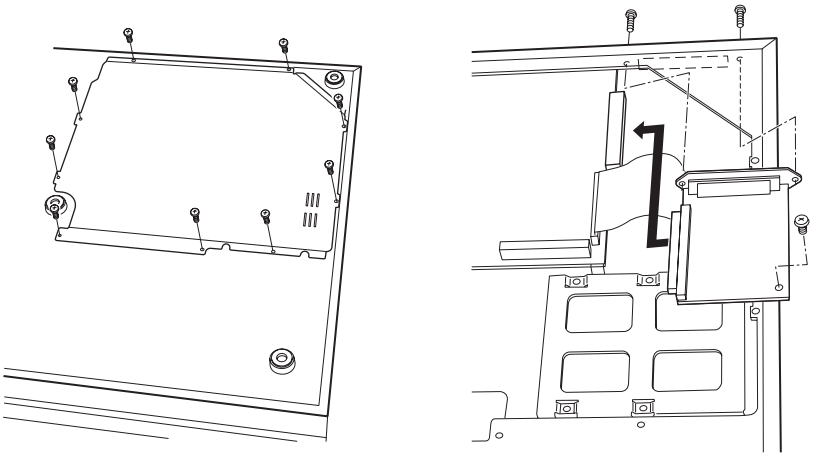
1. Remove the screws for the cover of expansion slot and remove the cover. Save the screws.
2. Slide the Option Board in along the guide groove and press it firmly to ensure secure connection.



3. Tighten the screws back that have been removed in the previous step.

IB-24SCSI

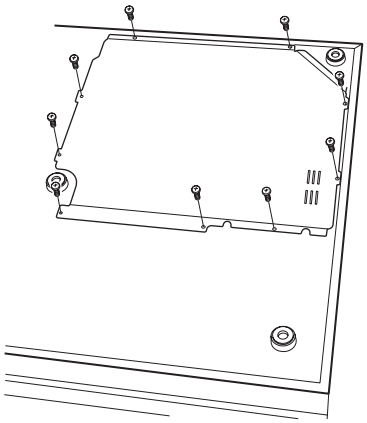
1. From the bottom of the unit, remove the screws for the bottom cover and open the bottom.



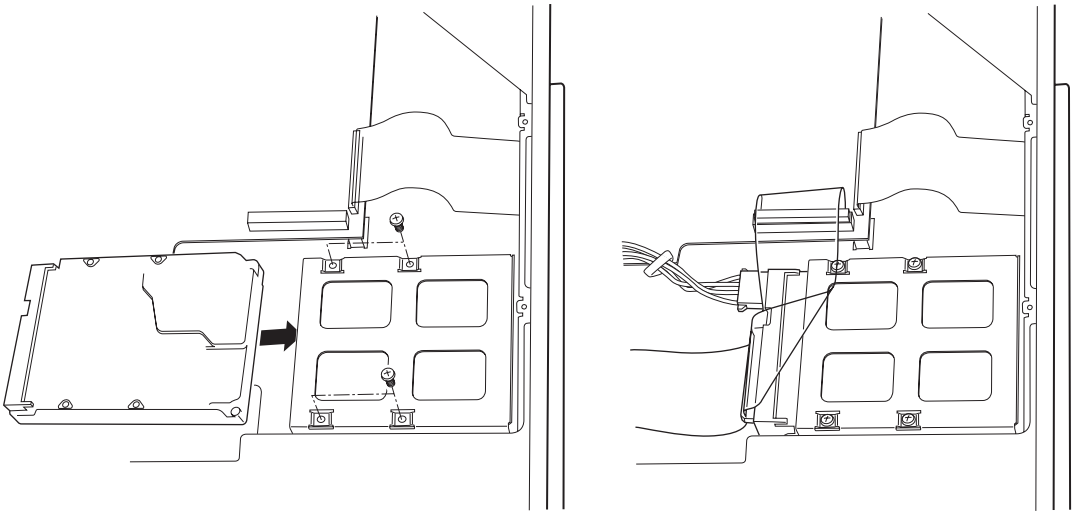
2. Remove the screws for the cover of SCSI option slot on the Rear Panel and remove the cover. Save the screws.
3. Place the board as illustrated, making sure that connectors are securely connected.
4. Mount the board with the screw included in the option board and with those screws removed previously.
5. Place the bottom cover back and tighten all screws.

Hard Disk Drive

1. From the bottom of the unit, remove the screws for the bottom cover and open the bottom.



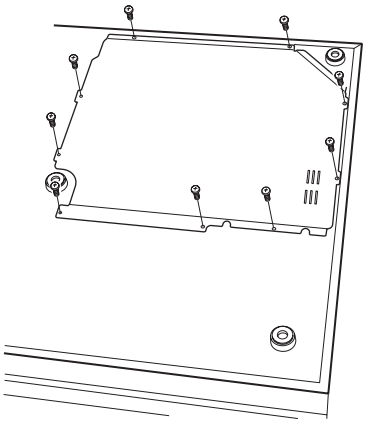
2. Referring to the illustration, slide the Hard Disk Drive in the disk holder and mount it with the screws inside the Internal Disk Mounting Kit. There are inch-threaded screws and millimeter-threaded screws inside. Be sure to use the appropriate type.
3. Connect the 4-pin Power Cable and 40-pin Disk Drive Cable as illustrated.



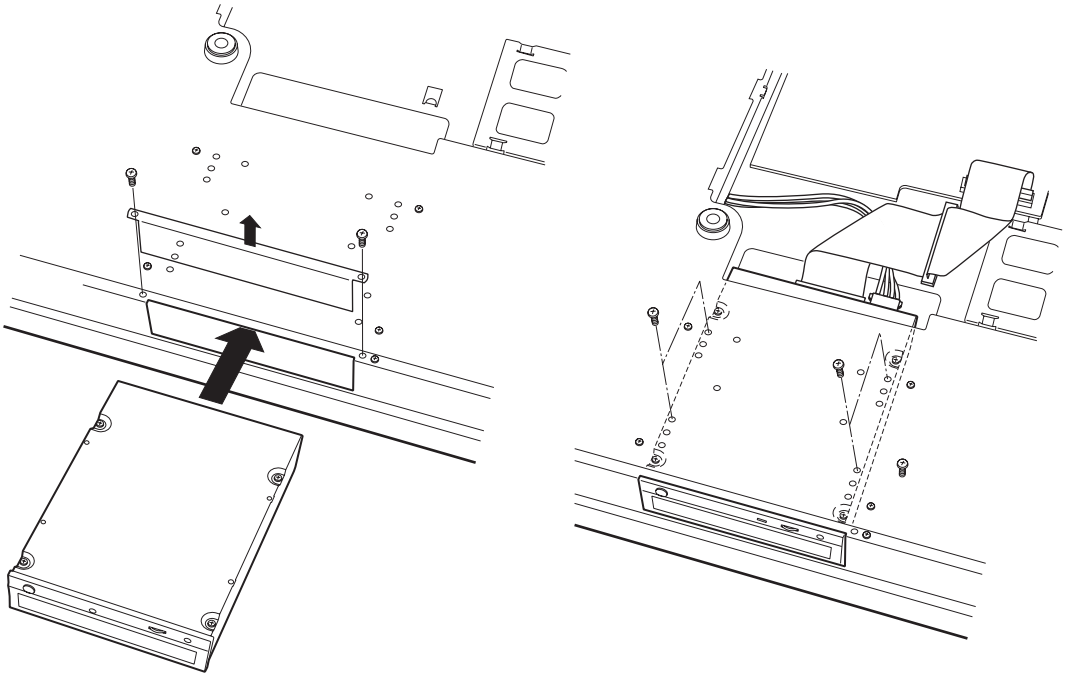
4. Place the bottom cover back and tighten all screws.

CD-R/CD-RW Drive

1. From the bottom of the unit, remove the screws for the bottom cover and open the bottom.



2. Remove the cover for the CD-R/RW Drive on the Front Panel.



3. Referring to the illustration, slide the CD-R/RW Drive from the front and mount it on the bottom chassis with the screws inside the Internal Disk Mounting Kit. There are inch-threaded screws and millimeter-threaded screws inside. Be sure to use the appropriate type.
4. Connect the 4-pin Power Cable and 40-pin Disk Drive Cable as illustrated.
5. Place the bottom cover back and tighten all screws.

Specifications

Power Supply	AC 120V 60Hz (US, Canada), 220-240V 50Hz (Europe) 110W	
Operating Temperature	10 - 35° C	
Operating Humidity	10% - 60% (without condensation)	
Dimensions (mm)	726 (W) x 190 (H) x 579 (D) max. (with LCD tilted down)	
Weight	17.8kg (without drive)	
Display	320 x 240 dots STN graphic LCD with back light	
Sampling Rate	96kHz, 48kHz, 44.1kHz, 32kHz	
Quantization Bit	24 bit/16 bit Linear	
Recording Media	Internal IDE Harddisk	
Recording Time	With 10Gbyte Harddisk drive (24bit)	
	FS=96kHz	Approx. 9 hrs. 55 min. (12 tracks x 49 min. 45 sec.)
	FS=48kHz	Approx. 19 hrs. 50 min. (24 tracks x 49 min. 45 sec.)
	FS=44.1kHz	Approx. 21 hrs. 35 mi*n. (24 tracks x 54 min. 10 sec.)
	FS=32kHz	Approx. 29 hrs. 50 min. (24 tracks x 1 hour 14 min.)
Frequency Response		
	FS=96kHz	10Hz - 44kHz +0/-2dB
	FS=48kHz	10Hz - 22kHz +0/-2dB
	FS=44.1kHz	10Hz - 20kHz +0/-2dB
	FS=32kHz	10Hz - 15kHz +0/-2dB
ADC	24bit 128-times oversampling, enhanced dual bit delta/sigma modulation	
DAC	24bit 8-times oversampling, advanced segment delta/sigma modulation	
Dynamic Range	104dB or more (30kHz LPF, FS=44.1kHz)	
Distortion Ratio	0.003% or less (1kHz, 44.1kHz)	
Channel Crosstalk	80dB or less (10kHz referenced, 100 ohms terminated)	
Wow & Flutter	Below measurable level	
Analog Audio Input	Inputs A	
	1 - 4ch	6.3mm Stereo Phone/XLR Combo Jack - balanced Phantom Power provided (switchable) for XLR connection
	5 - 12ch	6.3mm Stereo Phone/XLR Combo Jack - balanced
	Inputs B	
	1 - 12ch	6.3mm Stereo Phone Jack - balanced
	Hi-Z	
	12ch	6.3mm Phone Jack - unbalanced
	ADC In	6.3mm Stereo Phone Jack - balanced
	AUX In	6.3mm Stereo Phone Jack - balanced
	2-Track	RCA - unbalanced
Input Level	Mic mode	-62 - -2dBu (+16dBu max. balanced, 1kHz)
	Line mode	-47 - +13dBu (+31dBu max. balanced, 1kHz)
	Hi-Z	-68 - -8dBu (+10dBu max. unbalanced, 1kHz)
	ADC In	+4dBu (+22dBu max. balanced, 1kHz)
	AUX In	+4dBu (+22dBu max. balanced, 1kHz)
	2-Track	-14dBu (+4dBu max. unbalanced, 1kHz)
Impedance	Mic mode	3k ohms (1 - 12ch)
	Line mode	12k ohms (1 - 12ch)
	Hi-Z	1M ohms
	ADC In	10k ohms
	AUX In	10k ohms
	2-Track	15k ohms
Analog Audio Output	Stereo Out	6.3mm Stereo Phone - balanced
	Main (monitor)	6.3mm Stereo Phone - balanced
	Nearfield (monitor)	6.3mm Stereo Phone - balanced
	Studio Out	6.3mm Stereo Phone - balanced
	Direct Out	6.3mm Stereo Phone - balanced
	AUX Sends 1 - 4	6.3mm Stereo Phone - balanced

Output Level	Stereo Out	+4dBu (+22dBu balanced max., 20k ohms load)
	Main (monitor)	+4dBu (+22dBu balanced max., 20k ohms load)
	Nearfield (monitor)	+4dBu (+22dBu balanced max., 20k ohms load)
	Studio Out	+4dBu (+22dBu balanced max., 20k ohms load)
	Direct Out	+4dBu (+22dBu balanced max., 20k ohms load)
	AUX Sends 1 - 4	+4dBu (+22dBu balanced max., 20k ohms load)
Impedance	Stereo Out	1k ohms - balanced
	Main (monitor)	1k ohms - balanced
	Nearfield (monitor)	1k ohms - balanced
	Studio Out	1k ohms - balanced
	Direct Out	1k ohms - balanced
	AUX Sends 1 - 4	1k ohms - balanced
Stereo Phones Output	x 2, 6.3mm Stereo Phone Jack - adjustable	
	Max. Output	155mW/32 ohms
	Digital Audio Input	x 1, RCA (SPDIF) 2-channels assignable
	x 1, MP Light Pipe (adat/SPDIF) 8-channels/2-channel assignable	
Digital Audio Output	x 1, RCA (SPDIF) Master Output	
	x 1, MP Light Pipe (adat/SPDIF) 8-channels assignable/Master Output	
Wordclock	x 1, BNC - In/Out	
Foot switch	x 1, 6.3mm Phone Jack	
MIDI	x 3, 5 pin DIN - IN, OUT, THRU	
ASCII Keyboard	x 1, 6 pin Mini-DIN	
Accessories	3-prong Power Cable	
	Internal Disk Mounting Kit	
	Operator’s Manual	
Options	IB-24LTC - SMPTE/EBU LTC Interface Board	
	IB-24ADT - 16-channel adat Interface Board w/adat Sync	
	IB-24SCSI - SCSI Interface Board	

*0dBu = 0.775Vrms

The specifications are subject to change without prior notice.

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